

FREE

**MALTESE FISHING BOAT
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AN CAILIN ALAINN

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September 2024
Vol. 74 No. 886

**How to construct and sail your
very own gorgeous Galway
hooker explained in
step-by-step photo-led
format, Part 1**



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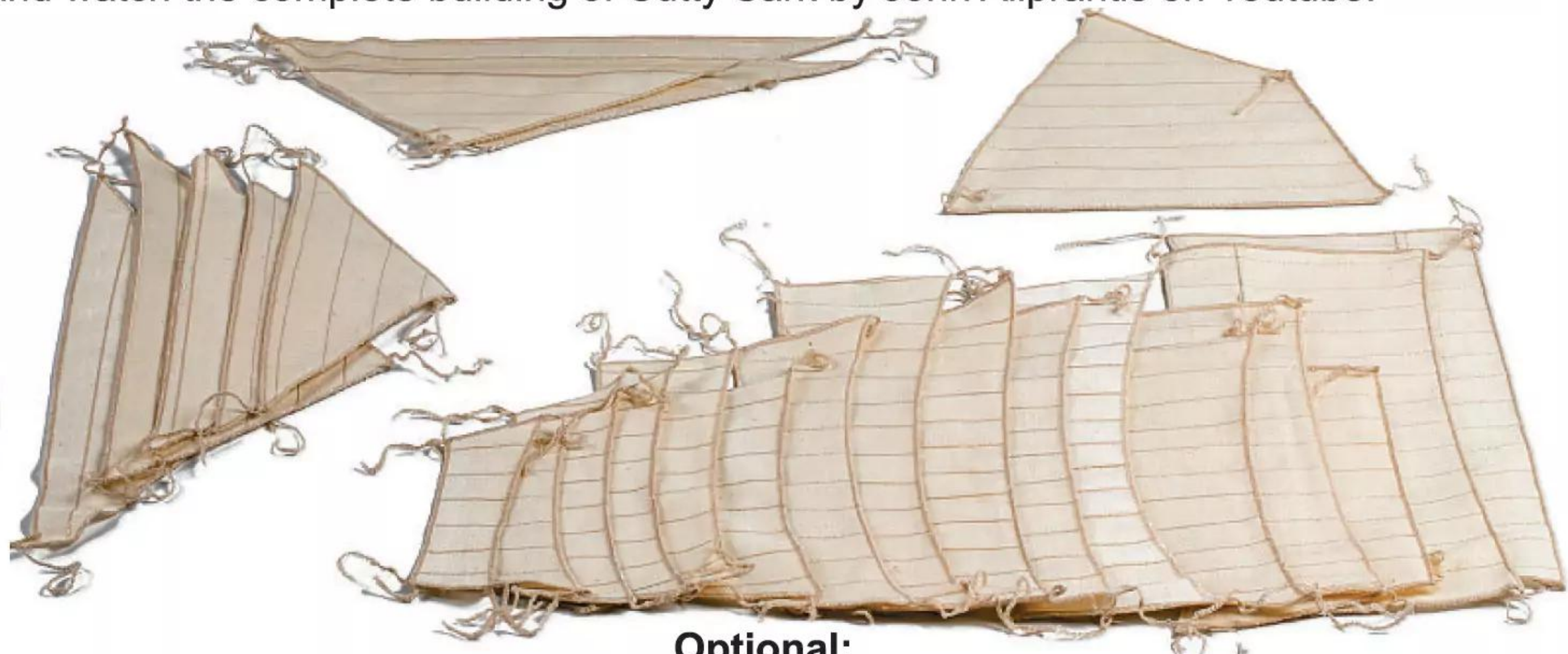


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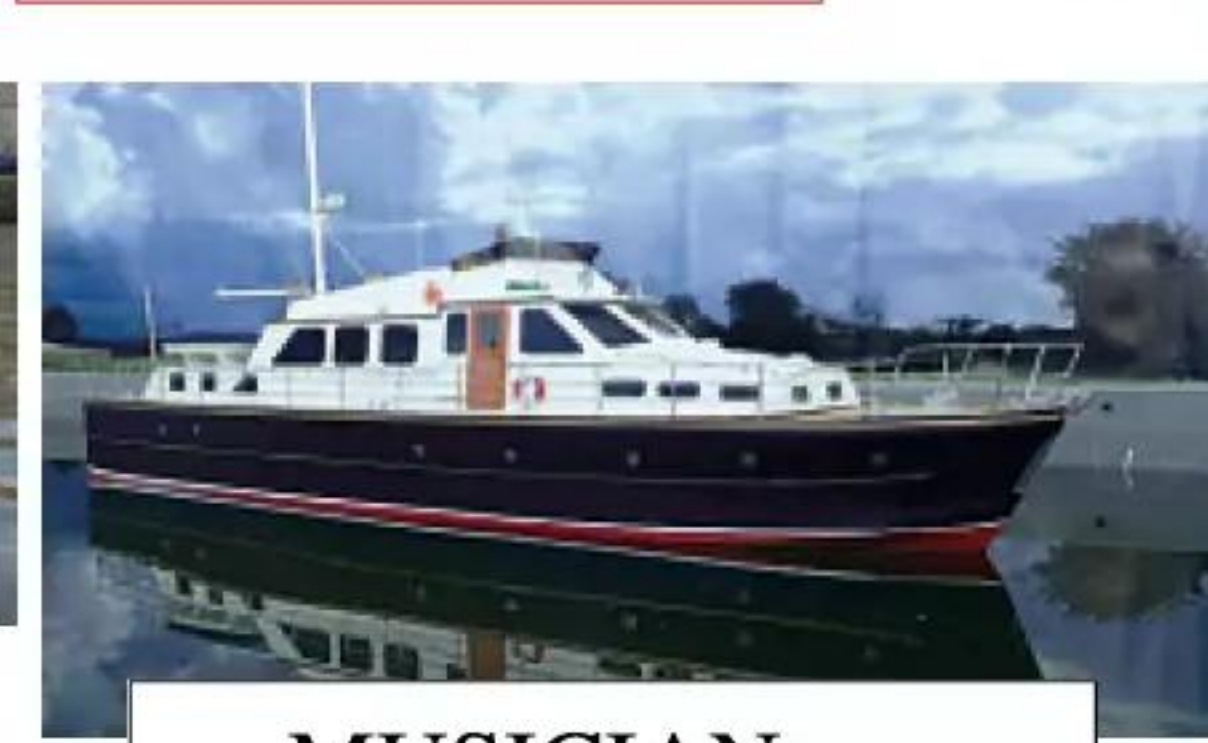
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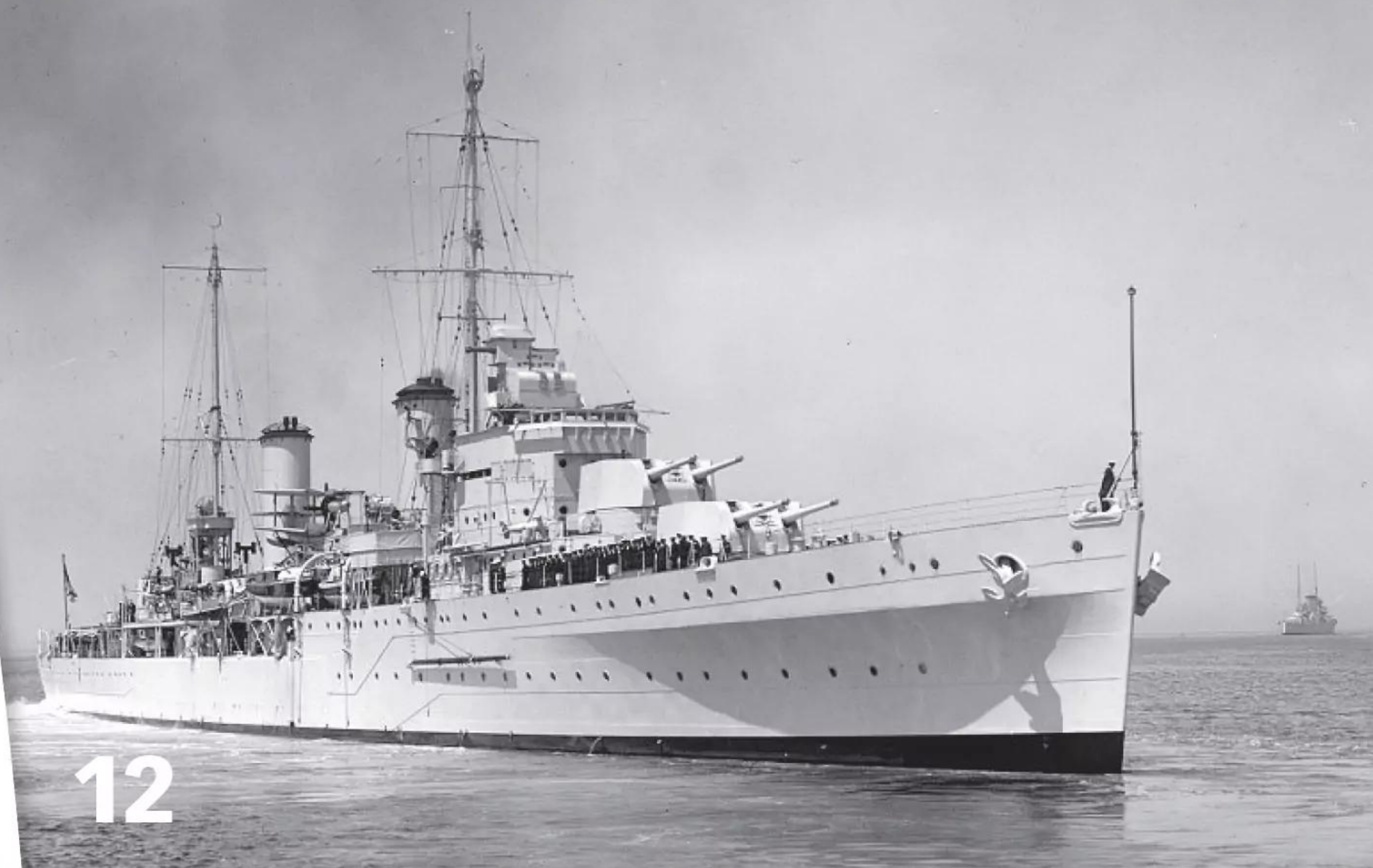
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Colin Laugharne tells the tale of a North Atlantic tug model 26 years



I think it's fair to say that, so far, summer in the UK has been a bit hit and miss this year. So, following on from Colin Bishop's Greek *Chaniotiki Gaita* featured in the July 2024 issue, we're once again bringing the Med to you, this time courtesy of Glynn Guest's free pull-out plan and instructions for a characterful little Maltese fishing boat.

Very different propositions are presented by the somewhat sinister-looking Karakurt-E and the wildly beautiful but undoubtable challenging to sail Galway hooker model builds embarked upon in Part 1 of the features from Dave Wooley and Tony Judd respectively.

The two projects are perhaps for the more experienced amongst you, but it's equally been great to see submissions in this month's bumper 10-page Your Models/Your Letters section showing some relatively simple but very effective modifications made to, and the fun being had out of, Heng Long's little Ready-to-Run budget buy tugboat, as reviewed by Phil Parker last month.

Fun, with a large splash of nostalgia, is also, I've discovered, the order of the day on a Facebook group entitled Bring Back Toy Boats. I'm perhaps a bit late to the party, as it already had thousands of members, but if you're not already familiar with it, it's well worth a visit, with loads of great posts and pictures to browse.

Getting back to the magazine though, with so many different thematic interests and skill levels to cater for, the balancing act is always a bit tricky, and we are, of course, very reliant on the model boat building community (that's you!) for a steady but varied stream of new material. So, if you believe certain aspects of the hobby are currently being neglected or overlooked (for example, one of our long-term readers has recently expressed he's been somewhat disappointed by the lack of yachting coverage over the past couple of years) and feel able to address this by submitting a feature or content of some sort, then please do get in touch. Even if you've never had an article published before, I'd love to discuss ideas with you and see how we can work together to get them into print. Likewise, newsworthy stories, details of forthcoming events, etc, are always very welcome for the Compass 360 pages.

For now, though, on with the September issue. Enjoy your read,
Lindsey

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in the making and now, nearing completion against all odds

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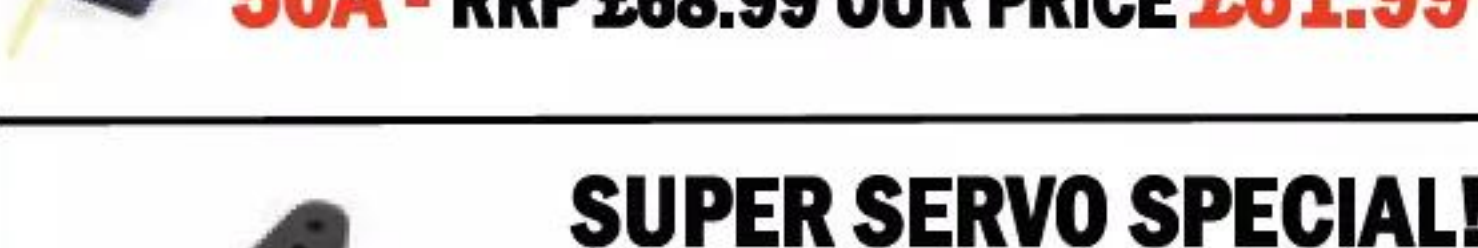
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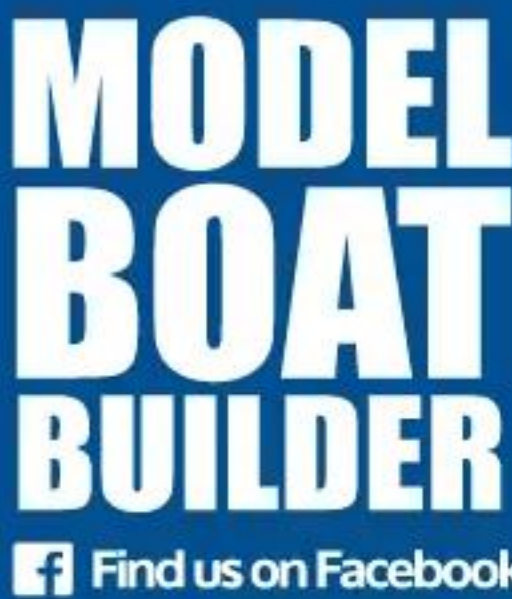


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If you have a news story for these pages, please contact the Editor, Lindsey Amrani, via e-mail at editor@modelboats.co.uk

OUT AND ABOUT

Kirklees MBC Autumn Open Day

Kirklees Model Boat Club will be holding its annual Autumn Open Day at Wilton Park, Bradford Road, Batley WF17 8JH from 9.30am to 3.30pm on Sunday, September 8, 2024.

Visitors will be welcome to sail their own model boats alongside those belonging to members on the club's lake (please note, steam powered models will need an up-to-date certificate and no I.C. or high-performance fast electric boats can be accommodated). Plus, there will be static model boats and military vehicle displays, IPMN Plastic Models will be



The Kirklees MBC has asked us to extend an open invitation to its Autumn Open Day, planned for Sunday, September 8.

on site, and it's hoped there will be a number of trade stands to browse.

Kirklees MBC has long prided itself on the charity fund raising raffles held at these events and, following the cancellation of this year's Summer Open Day due to bad weather, there will be a bumper crop of prizes to be won at the Autumn event.

Refreshments will be served throughout the day and there will be plenty of free car parking available. For more information contact the club's events planner Stan Reffin on 0113 2675790.

The Big St Albans Models Show

The St. Albans Society of Model Engineers will be hosting its annual show at Townsend CofE School, High Oaks, St Albans AL3 6DR, over the weekend of September 28-29. Doors will open from 10am to 5pm on both days.

Supported by various local clubs and those in the trade, there will be numerous displays and demonstrations to browse throughout the 11 halls within the building, as well as plenty of family

friendly activities to enjoy in the school's lovely grounds. These include, but will not be limited to, 'have-a-go' boats, racing cars, model railways, and a 'make an airplane and fly it outside' stand. There will also be a 'drive-a-train' experience for the very young and steam train rides for all.

Admission will be charged at £8 for adults (although a saving of £1 can be made on adult tickets purchased in advance via www.ticketsource.co.uk)

and £2 for children aged between 5-16 (there will be no charge for the under 5s).

There will be plenty of free parking and light refreshments will be available to purchase throughout the day.

Profits from this event will be donated to the local branch of the RNLI.

July Prize Draw winner

We are delighted to announce the lucky entrant drawn in the Billing Boats' Pre-Production Kit for Carli Prize Draw featured in the July issue of Model Boats as:

Mr Neil Mroz, Isle of Anglesey.
Congratulations, Neil!



Incorrect image apology

Sincerest apologies for any confusion caused by the incorrect image used to promote the Along Came a Spider series last month. The model shown was actually a Royal Navy Archer class patrol boat built by Phil Button, which will feature in completely different series coming soon, and not Dave Wooley's Russian Karakurt Missile Corvette (Export Variant), the build feature for which begins on page 16 of this issue.



The 2024 UK SAWS event

Scheduled for Sunday, September 29 is this year's SAWS (straight line speed) event, which will be held at the Carr Mill Dam, Garswood Old Road, St Helens, Merseyside WA11 7LZ, home to the Lancashire (full-size) Powerboat Racing Club, so ideally suited to R/C model boat record breaking. The event will run from 10am to 4pm and fees will be charged at £6 per class entered.

So, if you'd like to attend, please get in touch with MPBA (Model Power Boat Association) organiser Ian Williams at electro-marine@talktalk.net, who will be able to email you a listing of all the classes and current records. Ian has also asked us to point out that while he appreciates there are many readers of this magazine who own fast boats but don't usually race them, participation is easy and involves nothing more than running your boat in straight line for 110 yards. However, in order to take part, you will need to be a member of the MPBA (simply visit <https://mpba.org.uk/membership> to join) and take your membership card along with you on the day. You will also be required to display your MPBA number on your boat, which should be in black letter 20mm high on a white background (this being at the insistence of the MPBA's insurers).



Want to find out just how fast your boat is? Then why not take it along to the 2024 UK SAWS event at the Carr Mills Dam near St Helens, Merseyside on Sunday, September 29.

Chariots of Steam exhibition

From now until October 21, 2024, visitors to the Summerlee Museum of Scottish Industrial Life, located in Heritage Way, Coatbridge, North Lanarkshire ML5 1QD, will be able to enjoy this fascinating exhibition, which portrays the rich history of shipbuilding on the River Clyde through models of various types, these including everything from simple half-hull designs to grand display pieces.

Lachie Stewart, the man behind this remarkable collection, explains: "Creating these models has been my lifelong passion. Each ship tells a story of innovation, perseverance, and the remarkable history of the Clyde. I'm thrilled to share this collection with the public and hope it inspires a deeper appreciation for the art of model shipbuilding and the rich maritime heritage of our region".

The Museum is open seven days a week, from 10am to 4pm, and admission is free of charge. For further information, call 01236 638460 or email: info@northlan.gov.uk.



Master modeller Lachie Stewart, the man behind the impressive collection of model ships/boats currently on display at the Summerlee Museum of Scottish Industrial Life.

BUY THE BOOK

The Royal Navy in the Cold War Years, 1966–1990

This new book by naval historian Edward Hampshire covers the period the Royal Navy faced some of its greatest challenges. The author sets out to analyse shadowing operations and confrontations at sea with Soviet ships and submarines; the Navy's role in the enormous NATO and Warsaw Pact naval exercises that acted out potential war scenarios; individual operations from the Falklands and the 1990–91 Gulf War to the Beira and Armilla patrols; the development of advanced naval technologies to counter Soviet capabilities; policy-making controversies as the three services fought for resources – including the controversial 1981 Nott defence review; and what life was like in the Cold War navy for ratings and officers.

Published in hardback format, under ISBN 9781399041225, and priced at £35, the book can now be ordered through all good bookstores or at the currently discounted price of £28 via the website www.pen-and-sword.co.uk

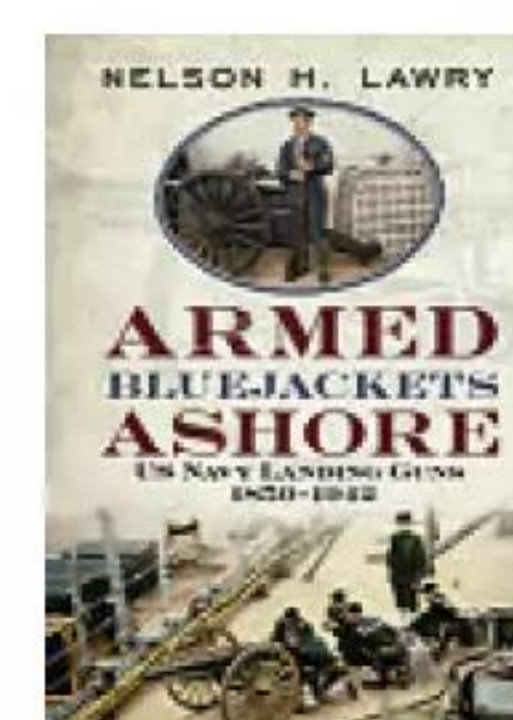


Armed Bluejackets Ashore: US Navy Landing Guns 1850-1942

This latest release from Fonthill Media Ltd sees historian Nelson H. Lawry chronicle the history and characteristics of every model of US Navy landing gun produced between 1850 and 1942, offering a thorough account of ordnance development, and includes a wide selection of rare, previously unpublished images collected from various naval archives, museums and other repositories.

The United States put armed naval landing parties ashore in numerous countries across the world in the mid-nineteenth to early twentieth century. Specially designed light field guns carried aboard gunboats and larger warships sometimes supported the bluejackets and marines, usually when larger parties more likely to face sharp actions went ashore.

The book is published in hardback format, under ISBN 978-1-62545-082-1, and carries an RRP (Recommended Retail Price) of £40. It can, however, currently be ordered at the discounted price of £28 directly from www.fonthillmedia.com



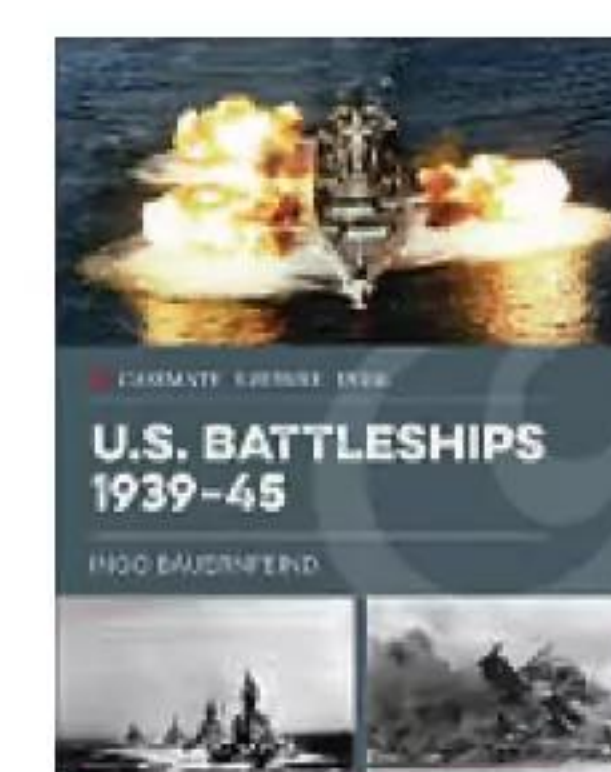
U.S. Battleships 1939–45

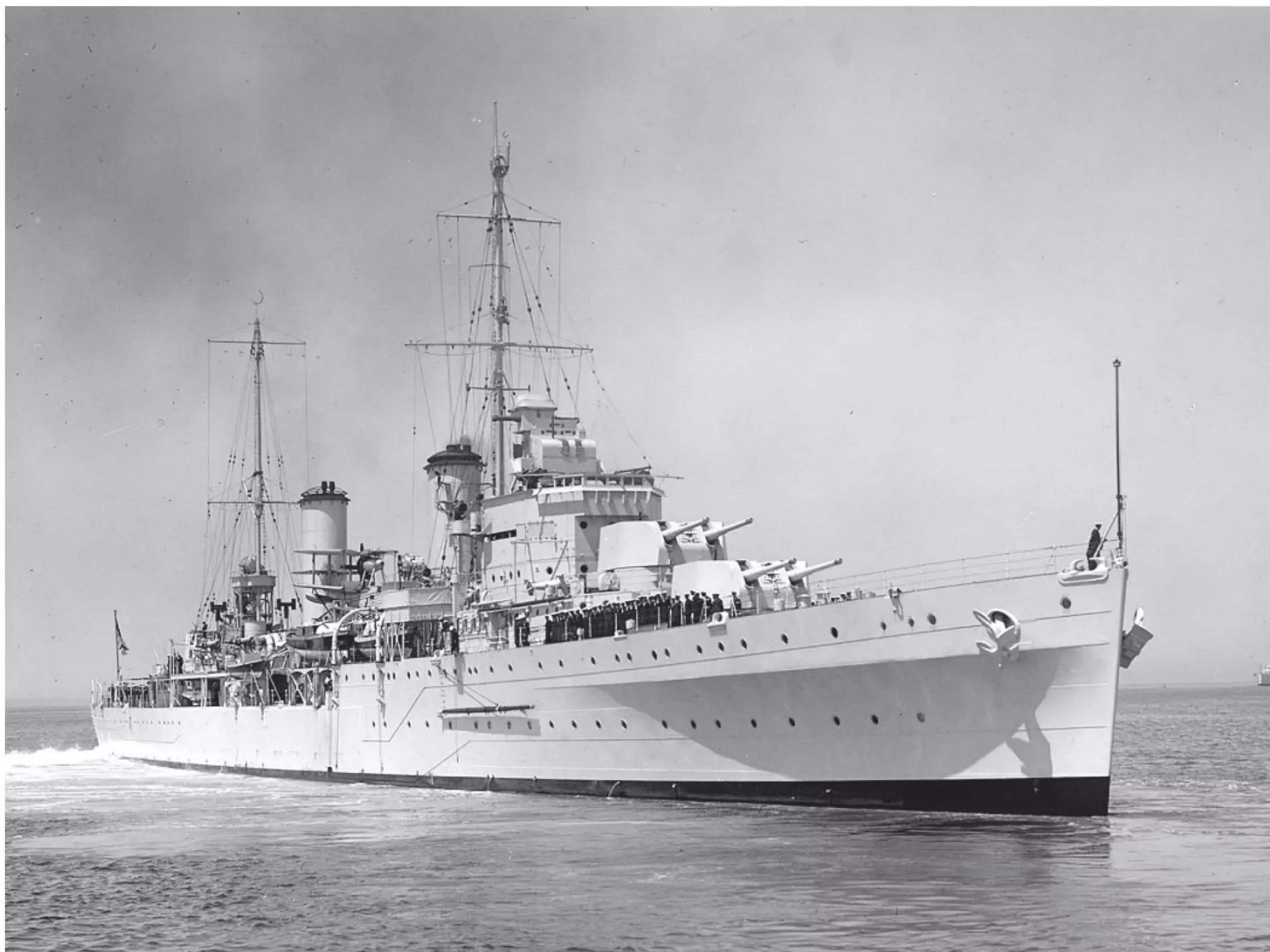
In this fully illustrated, newly released title, naval historian Ingo Bauernfeind documents the US Navy's battleships and cruisers, giving an overview of each individual ship's career, significance in American naval history and ultimate fate.

Also covered are various battles in the Pacific, how US battleships served to provide shore bombardment during the invasions of Iwo Jima and Okinawa and the D-day landings in Normandy, and the little-known actions of the Iowa-class during the Korean and Vietnam wars and during Operation Desert Storm in 1991.

All of this culminates in a guided tour through the mighty USS *Missouri*, an overview of the other seven preserved US battleships serving as floating museums for future generations, and a dive to the sunken USS *Arizona* and USS *Utah* at Pearl Harbor.

Published in hardback format and carrying an RRP of £49.95, the title can be ordered from all good bookstores when quoting ISBN 9781636242569. It is, however, currently being offered at the discounted price of £39.96 when ordering via <https://www.pen-and-sword.co.uk>.





HMAS Sydney in 1936 (State Library of Victoria via Wikipedia).

The Long Silence of HMAS Sydney

John Parker explains how historians finally unravelled a maritime mystery and considers the modelling options when it comes to commemorating this long-lost light cruiser

At the outbreak of World War II in September 1939 the most powerful vessels in the Royal Australian Navy (RAN) consisted of the two heavy cruisers *Canberra* and *Australia*, plus the four light cruisers *Hobart*, *Sydney*, *Perth* and *Adelaide*. By 1942, after three years of hard action, *Canberra*, *Sydney* and *Perth*

had been sunk, while *Hobart* was so badly damaged in 1943 that she was put out of action until the last few months of the war.

When *Sydney* failed to return to port in November 1941 and nothing was ever heard from her or her 645 crew members again, her loss quickly came to be viewed not only as Australia's

greatest maritime disaster but its greatest maritime mystery.

HMAS Sydney

Like her sister ships *Hobart* and *Perth*, *Sydney (II)* was a modified Leander class light cruiser. Originally being built for the Royal Navy as *HMS Phaeton*, she was taken over

“When Sydney failed to return to port in November 1941 and nothing was ever heard from her or her 645 crew members again, her loss quickly came to be viewed not only as Australia’s greatest maritime disaster but its greatest maritime mystery”

by the RAN before completion in 1934 and renamed HMAS Sydney. She was the second ship to be named after the New South Wales capital, following the Sydney (I) of World War 1 that sank the German cruiser SMS Emden. Four geared turbines provided 72,000 shaft horsepower to drive the ship of 7,198 tons standard displacement at a maximum of 32.5 knots, with a range of 8,100 nautical miles at 16 knots. The main armament was eight 6-inch (152mm) guns in twin turrets, with four 4-inch (102mm) guns as secondary/AA armament and two quadruple torpedo launchers.

In February 1941 Sydney returned to Australia amidst much acclaim for her successful operations in the Mediterranean under Captain John Collins, in which she sank the Italian cruiser Bertolomeo Colliori and the destroyer Espero. After a refit, she was assigned to convoy escort duty in home waters under a new captain, Joseph Burnett. On November 19, 1941, returning to port alone, she approached an unidentified merchant vessel 120 miles off the Western Australian coast that was not responding to signals.

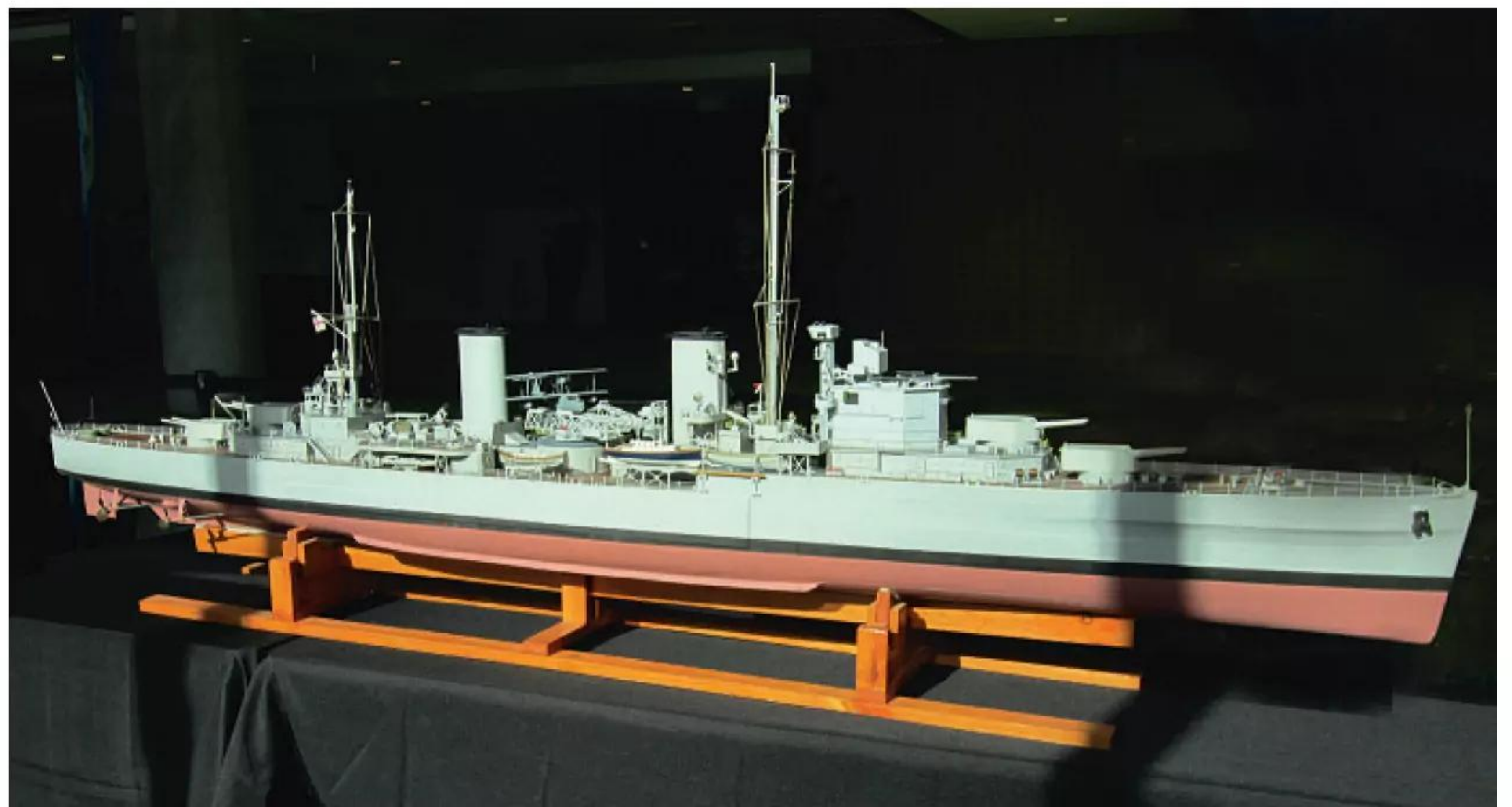
SMS Kormoran

The vessel was in fact the auxiliary cruiser or merchant raider Kormoran of the German navy, which had been responsible for the sinking of ten allied merchant vessels during a year-long forage in the Atlantic and Indian oceans. Disguised as the Dutch merchant vessel Straat Malakka, she was armed with six 5.9-inch (150mm) guns and an assortment of smaller weapons, all concealed behind hydraulic drop-down doors, as well as six torpedo tubes, two concealed below the waterline. Four diesel engines provided the 19,900-ton displacement ship with a maximum speed of 18 knots.

Korvettenkapitan Theodor Detmers of the Kormoran knew he would normally stand no chance against an enemy cruiser, but he kept his cool and turned up-sun, instructing



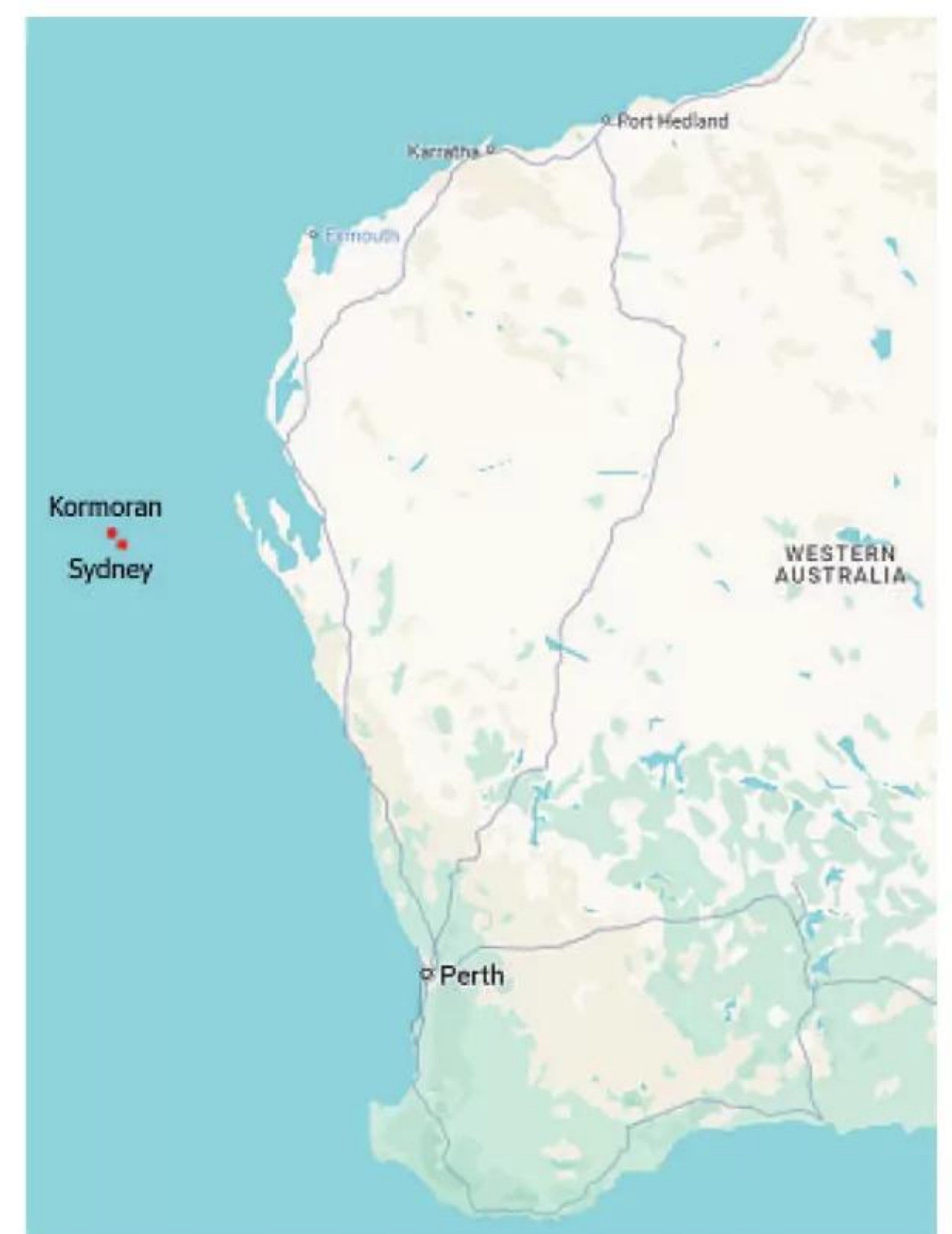
The auxiliary cruiser SMS Kormoran taken from a German submarine in 1940. (German Federal Archive via Wikipedia)



1:72 scale model of the Sydney (President of Task Force 72).

his signaller to fumble his replies to Sydney’s challenges, running a flag up and then down again to correct it, in an effort to maintain the ruse of an inexperienced and inept merchant ship crew. All the while the Sydney drew closer, bit by bit forfeiting her fighting advantages of superior speed and gunnery and a hull that was armoured, but only against long-range fire.

Sydney was steaming just 1500 metres abeam when the Kormoran dropped her disguise and struck her true colours. The very first salvo from Kormoran’s six-inch guns slammed into her bridge, probably killing the captain and causing loss of command and control. In return Sydney’s hurried first salvo from A and B turrets went over their target, where they may have been aimed to provide a warning shot.



Location of the wrecks off the Western Australian coast.



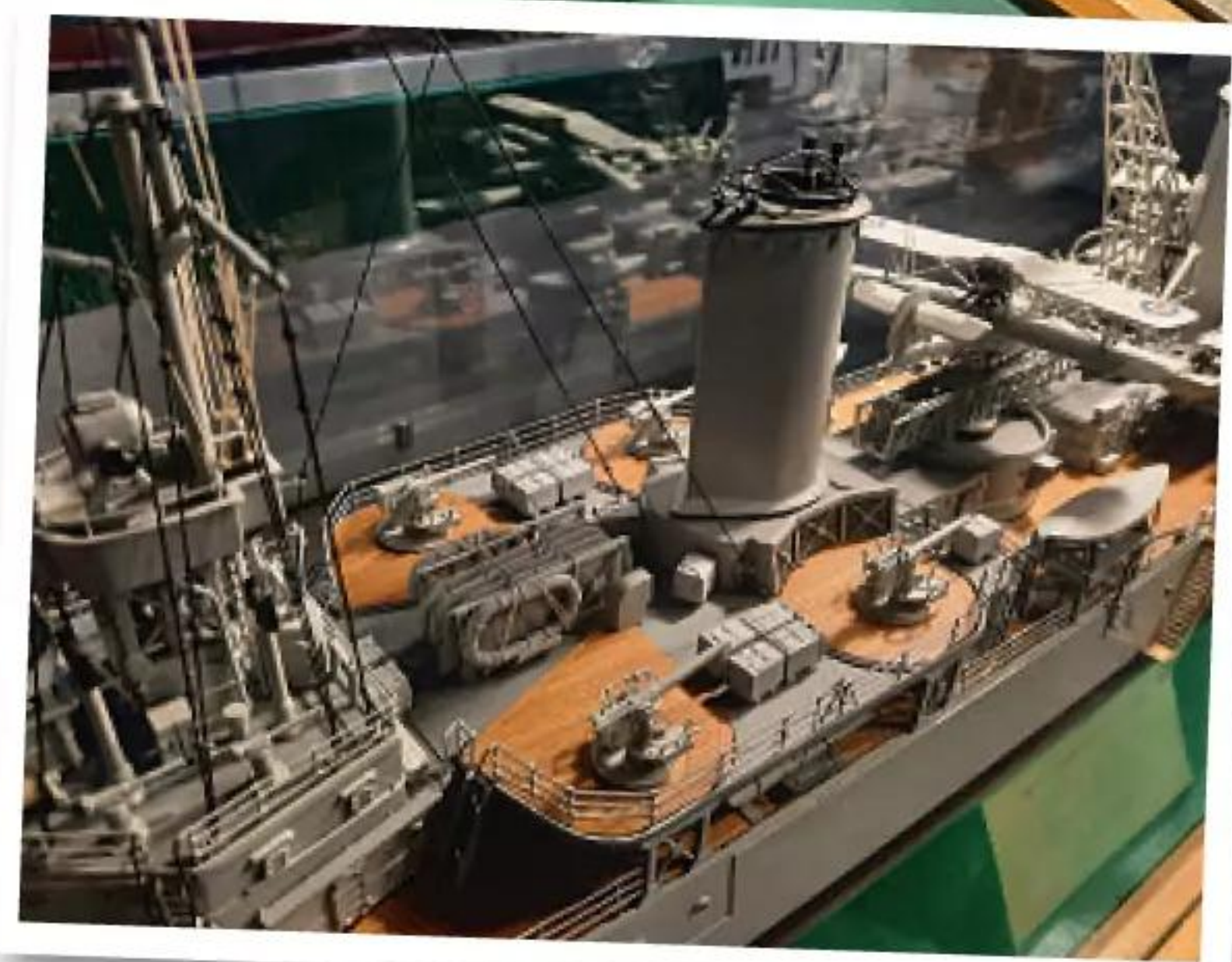
Loss of the Sydney was announced in the press on December 1, 1941.



The Carley float that was found floating off Christmas Island with a corpse in it 18 months after the sinking (Nick-D via Wikipedia).



Four views of the showcase model of the Sydney that is in the Seaworks Maritime Museum, Williamstown, Melbourne.



firing under local control, with X turret scoring some vital hits, which ultimately led to the sinking of the *Kormoran*. Sydney was last seen drifting crippled and on fire ten miles south of the engagement, lighting the night sky with her glow. Nothing further was ever heard from the ship or any of her crew members.

An enduring mystery finally solved

How had Australia's proudest cruiser been so quickly dispatched by a mere merchant cruiser? There was only the testimony of surviving crew members from the *Kormoran*, and these were treated with suspicion; conspiracy theories began to thrive. Only the discovery and examination of the wrecks in 2008 revealed the truth: the accounts of the *Kormoran*'s survivors were essentially true, the battle damage told of the events as outlined and that Sydney had simply allowed herself to approach too close and be caught unawares. The lack of survivors was probably due to the end having come suddenly, when the weakened

"How had Australia's proudest cruiser been so quickly dispatched by a mere merchant cruiser?"

37mm and 20mm cannon fire from the *Kormoran* raked Sydney's deck, killing many, including the crews of the 4-inch guns which remained silent. Fire spread from a hit to the petrol supply for the ship's Walrus aircraft. A torpedo thudded into

Sydney's side beneath the fore turrets, blowing the roof off A turret and jamming B turret before they had a chance to fire their second salvos.

After just two minutes Sydney was mortally wounded, but desperately fought back. X and Y turrets were



Bumagi's card kit of HMAS Sydney.



NTT mixed media kit of HMAS Sydney.

bow sheared off, and surviving crew members were tossed into shark infested waters so close to home.

Eleven weeks after the sinking, the body of an unknown seaman in a Carley float was found off Christmas Island in the Indian Ocean, where locals buried him in an unmarked grave. Over the decades growing speculation that the body may have come from the Sydney led to the identification of the grave and exhumation of the body in 2006. A challenging DNA search for a matching relative followed, which finally came to its conclusion in 2021: the body was that of 21-year-old Able Seaman Thomas Welby Clark of HMAS

Sydney. His re-dedicated grave at the Geraldton War Memorial now serves as memorial to all 645 crew members lost.

Modelling the Sydney

Looking around online, I found several sources of plans for HMAS Sydney, such as blueprints.com and on the Finding Sydney Foundation website: <http://www.findingsydney.com/images/schematic.gif> The RAN's own website provides much helpful background information and images: <https://seapower.navy.gov.au/hmas-sydney-ii> Details may be checked on a superb 3D drawing by Thomas Schmid at <http://3dhistory.de/>



Commemorative one dollar coin issued in 2000.

wordpress/3d-models/hmas-sydney/ The scratch-builder is thus unlikely to find he is short of information if he decides to tackle a model of this handsome ship. The story of the various investigations that led to the finding of the wrecks and some eerie photos of the wreck site may be seen at: <https://museum.wa.gov.au/explore/sydney>

At 1:72 scale, the cruiser Sydney measures some 2350mm (92.5 inches) long with a 240mm (9.5 inch) beam and represents a superb canvas on which the artistic modeller can really bring out his skills. A.P.S. Models (apsmodels@optusnet.com.au) can provide a semi-kit to this scale which includes a detailed hull, main armament, ship's boats and many detail fittings that can be used to build any of the five vessels of the modified Leander class. A quick calculation shows the 'light' cruiser model will have an estimated weight of just under 20kg.

A 1:200 card kit by the Ukrainian company Bumagi builds into a full-hull model 870mm long; just don't be put off by the misspelling *Sidney* on the cover! Flyhawk models list a 1:700 mixed media kit, number FH1155, but I am uncertain as to its current availability. The Czech NNT company also list a 1:700 mixed-media kit of the Sydney (number 70008), and it does a kit of the *Kormoran* (number 7006) to the same scale. A 32-page Polish-English profile publication, number 65, was put out by BS Firma Wydawniczo-Handlowa in 2015.

That's about it, as far I am aware – there sadly don't appear to be any R/C kits or injection moulded kits in the popular scales, though it might prove possible to convert a kit of an original Leander class cruiser into a modified Leander. ●



Launching the Karakurt class of missile corvettes.

Along came a Spider...

PART 1

Dave Wooley sets to work on a 1:50 scale Karakurt Missile Corvette Export variant, with the help of modellers' drafts compiled by **Peter Brown**

I first laid eyes on the Karakurt design some five years ago and immediately began to consider its potential from a modeller's perspective. I noted how many countries with exposed coastal regions, and not just those surround the Baltic Sea, are moving towards smaller, faster, more versatile and well-armed naval units of patrol boat/corvette proportions. Why this is so

is due to cost, a lengthy construction period and, also, the number of personnel required for each vessel.

The design of this class, given the designation Project 22800 Karakurt (Karakurt translating into English as spider), is attributed to the Almaz Central Marine Design Bureau), with a total of 18 of these vessels having been constructed at various shipyards around the Russian Federation.

Akin to the vessel's designation of missile corvette, the displacement is 800 tons in a hull 67m in length x 11m in beam, with a draft of 3.3m. Power is provided by three Zvezda diesel engines, with 3 diesel generators, giving a top speed of around 40kts and a range of 2,500 nautical miles, with an endurance of approximately 15 days.

The design incorporates an integrated mast supporting phased

“There was no specific GRP hull available for this vessel. Fortunately, however, I had an idea...”

array radar panels and a single AK-176 76.2mm naval gun forward. The first two in the class had two AK630 M close-in weapons systems mounted amidships, reminiscent of Soviet era warships. On later units, however, the deck housing was modified to take the larger, more effective, Pansir rocket/gun air defence system.

The primary armament is the Kalibr long range anti-ship cruise missile, these missiles being mounted in eight vertical launch tubes amidships.

The model

Research carried out in the hope of finding something a little more exciting than the regular grey livery revealed several concept illustrations showing camouflage schemes created specifically for the proposed export variant. The idea instantly appealed and so it was this variant that would become the focus of my build, constructed to 1:50 scale, with a hull measuring 1150mm in length by 230mm in beam.

My original drawing hadn't included a body plan, but the later more detailed plans drawn by Peter Brown incorporated both a body plan and a comprehensive profile of the hull and the superstructure – with the definition of the superstructure's critical angles (sloping sides) being particularly helpful.

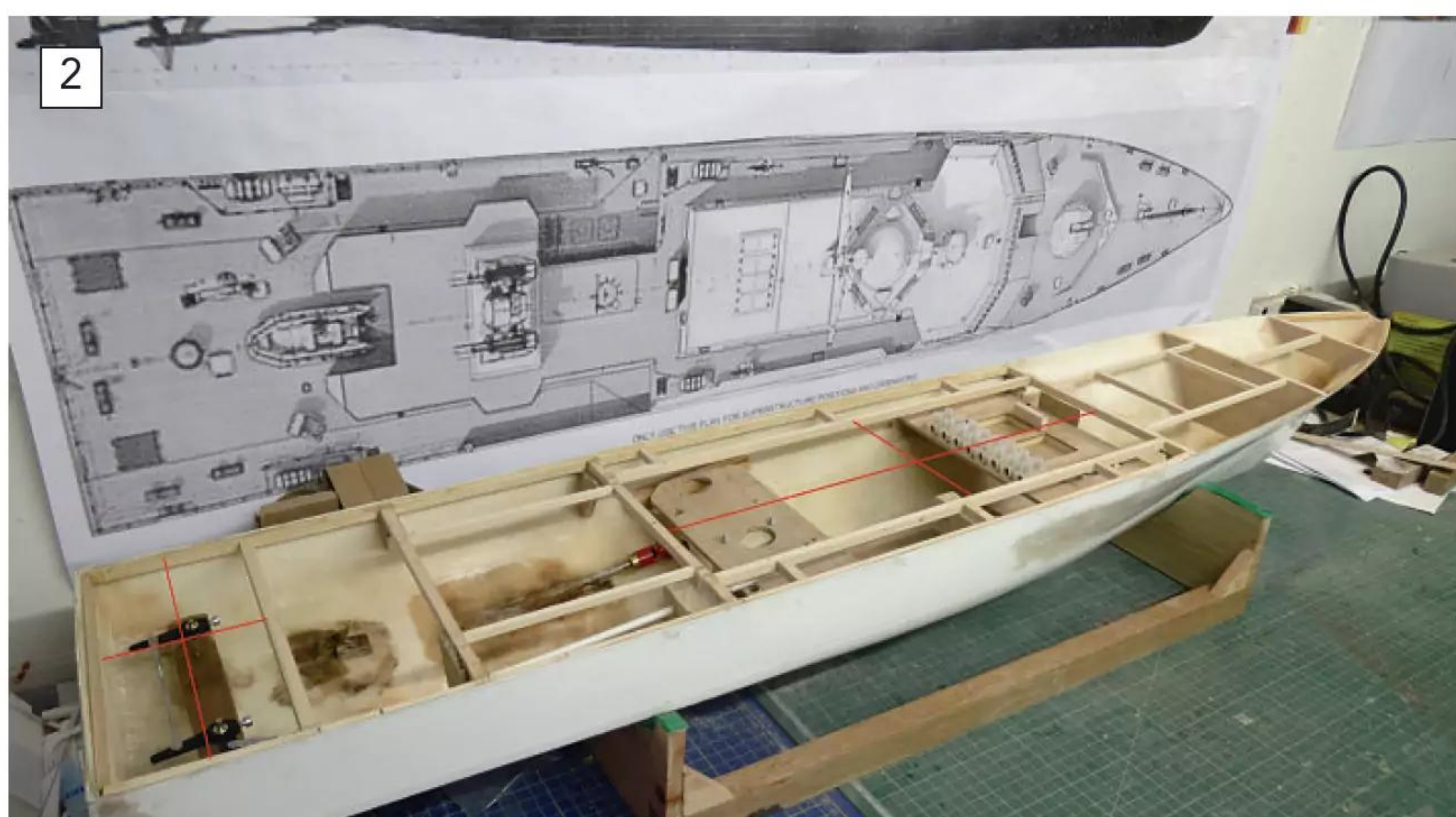
Many of the numerous fittings featured are the same as those used on my previous build of the *Soobrazitelnyy*, while others, such as the Pansir gun /missile system and the turret for the 76mm gun were formed using a 3D process by Mark Hawkins.

There was no specific GRP hull available for this vessel. Fortunately, however, I had an idea... Some years beforehand I'd been given a set of plans for the VT-designed patrol vessel *Indepencia*, and given the similarity in shape and approximate proportions, it occurred to me that Mountfleet Models' hull for the *Indepencia* could, with a few moderations, such as altering the chine line, bow, shear and transom, work. I therefore ordered this hull and swiftly set about making the necessary changes (see **Photo 1**).

From the off, a decision was made to install a 1mm marine ply deck. All the stringers and cross members were therefore cut from strips of spruce and balsa and much thought was given to



The converted GRP hull of the *Indepencia*, available from Mountfleet Models.



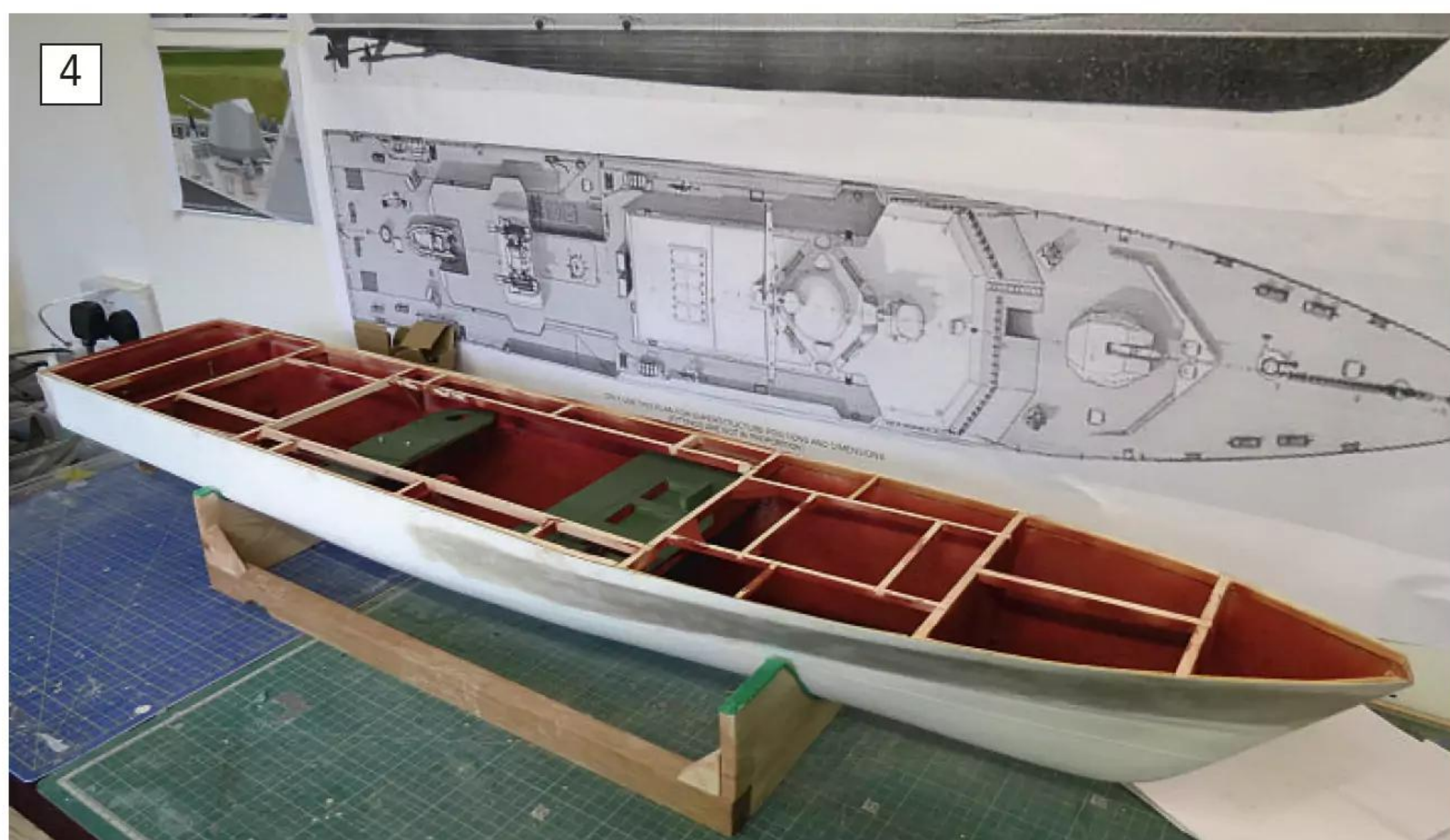
Fixing all the deck edge timbers and cross members.



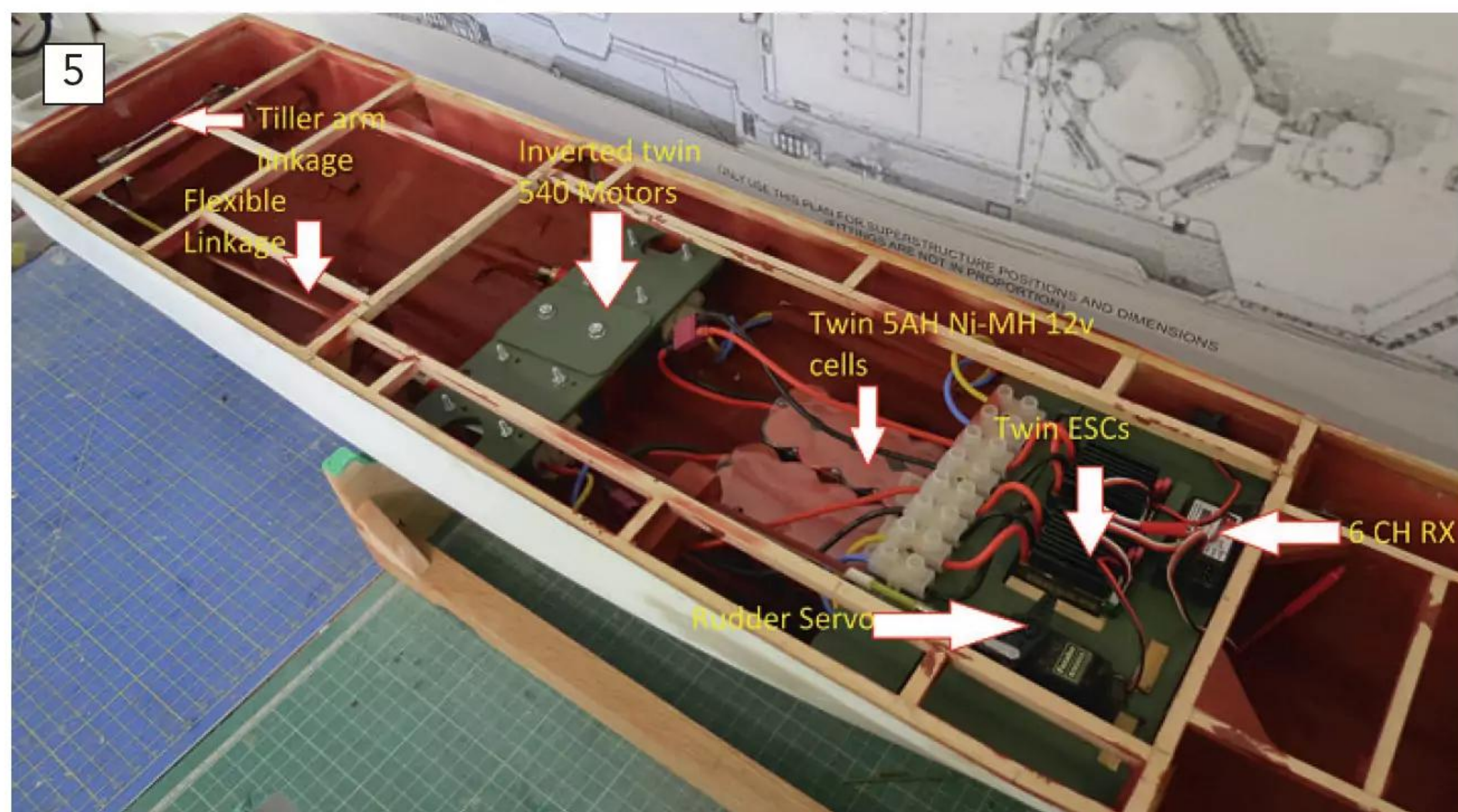
The dual rudder linkage and inverted engine mounting for two 540 motors.

where the access into the hull should be, how the two 540 motors should be mounted, and, of course, to my rudder linkages. So, the area marked red in **Photo 2** denotes access to the

hull, and, following on from previous builds, the two 540 motors were mounted inverted, allowing for better alignment and easy removal of my motors (see **Photo 3**).



The interior of the hull, sprayed with Halfords red primer. Care was taken to ensure the top edge of the timber bearers remained paint free.



The internal installation.



Ballasting trials.

Once satisfied with the deck supports and access, the interior of my hull was sprayed in Halfords red primer, with the motor mounting and mounting for the rudder servo, and RX/ ESCs sprayed in green (see **Photo 4**). Annotations added to **Photo 5** indicate where everything is positioned within the hull.

With this installation undertaken, it was then down to the pond for ballast and steering trials (at this juncture, the lower hull detail, spray strip forward, bilge keels, exhaust covers, and transom extensions were yet to be fitted). Thankfully, all the trials were good, and I could confidently move on to forming the deck (see **Photo 6**).

Fitting the deck

When building from scratch, certain materials work better than others in terms of ease of preparation, construction and finish, and for this reason I have shifted more towards working with timber. So, commencing with the 1mm ply deck, openings for access were cut to suit (see **Photo 7**). My adhesive of choice for bonding the deck to the bearers was Evo-Stik Wood Glue Exterior (see **Photos 8-11**).

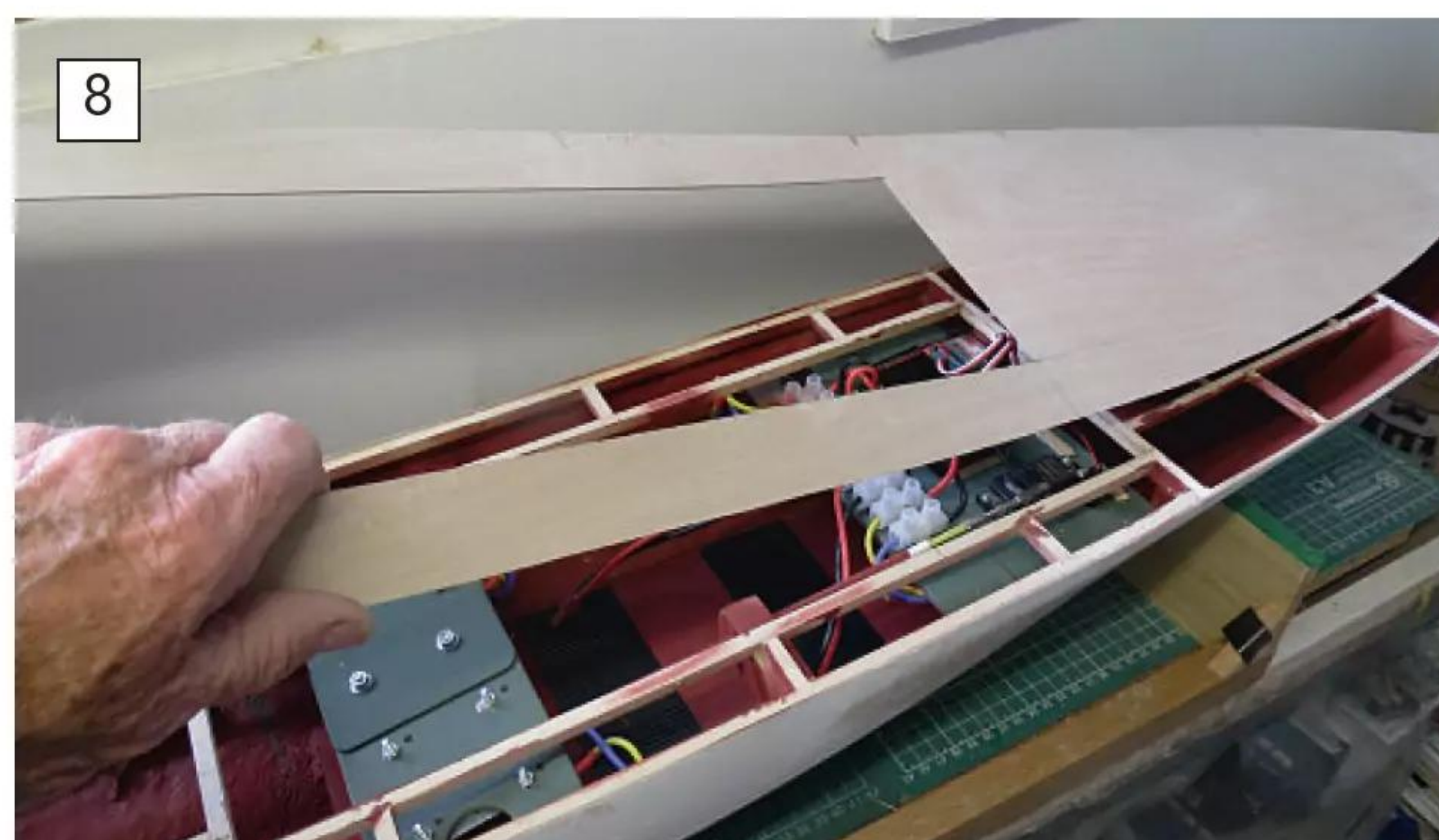
Superstructure

I made the decision to develop the superstructure so it could be removed as one piece. However, construction needed to allow for the fact that the bridge amidships has sloping facets, while aft they are vertical. Also, 50% of the superstructure is 3mm inboard of the deck edge. So, first off, the amidships access area was formed into a box, with the centre section of the bridge and RHIB enclosure added aft. This was followed by positioning five angle formers to port and starboard of the box and locating bracings both along its internal edges and across it (see **Photo 12**). The next stage involved the fitting of a 1/32nd thickness ply 01 deck and the upper superstructure (see **Photo 13**). With 01 deck in place, development of the superstructure could continue along with the sloping facets of the bridge frontage (see **photo 14**).

“I made the decision to develop the superstructure so it could be removed as one piece. However, construction needed to allow for the fact that the bridge amidships has sloping facets, while aft they are vertical”



Preparing access areas in the main deck.



Making sure the deck edge openings coincide with the deck bearers that will provide access to the hull's interior.



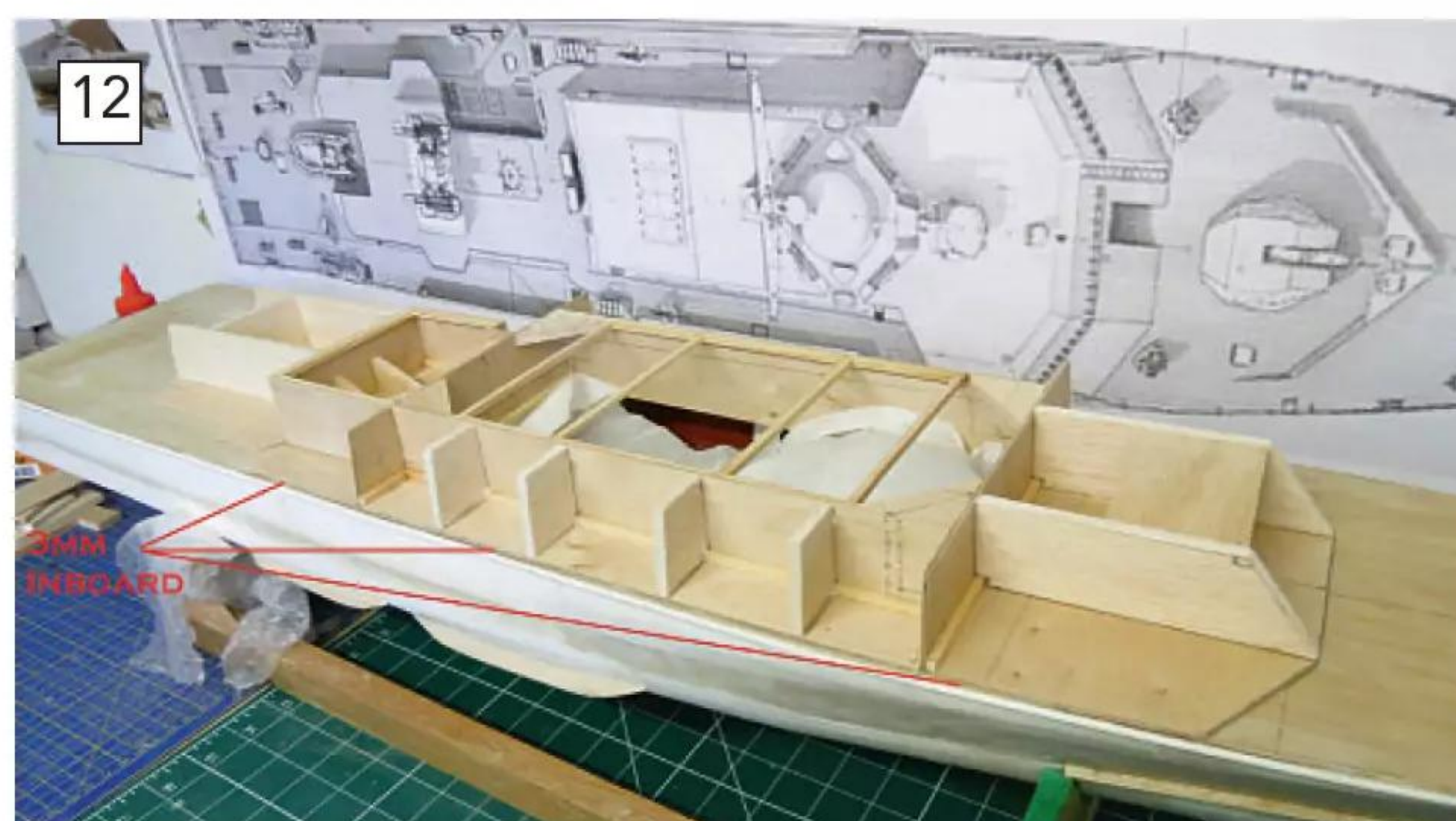
Satisfyingly, the deck openings match the inboard edge of the bearers so that a raised coaming can be added to the main access area.



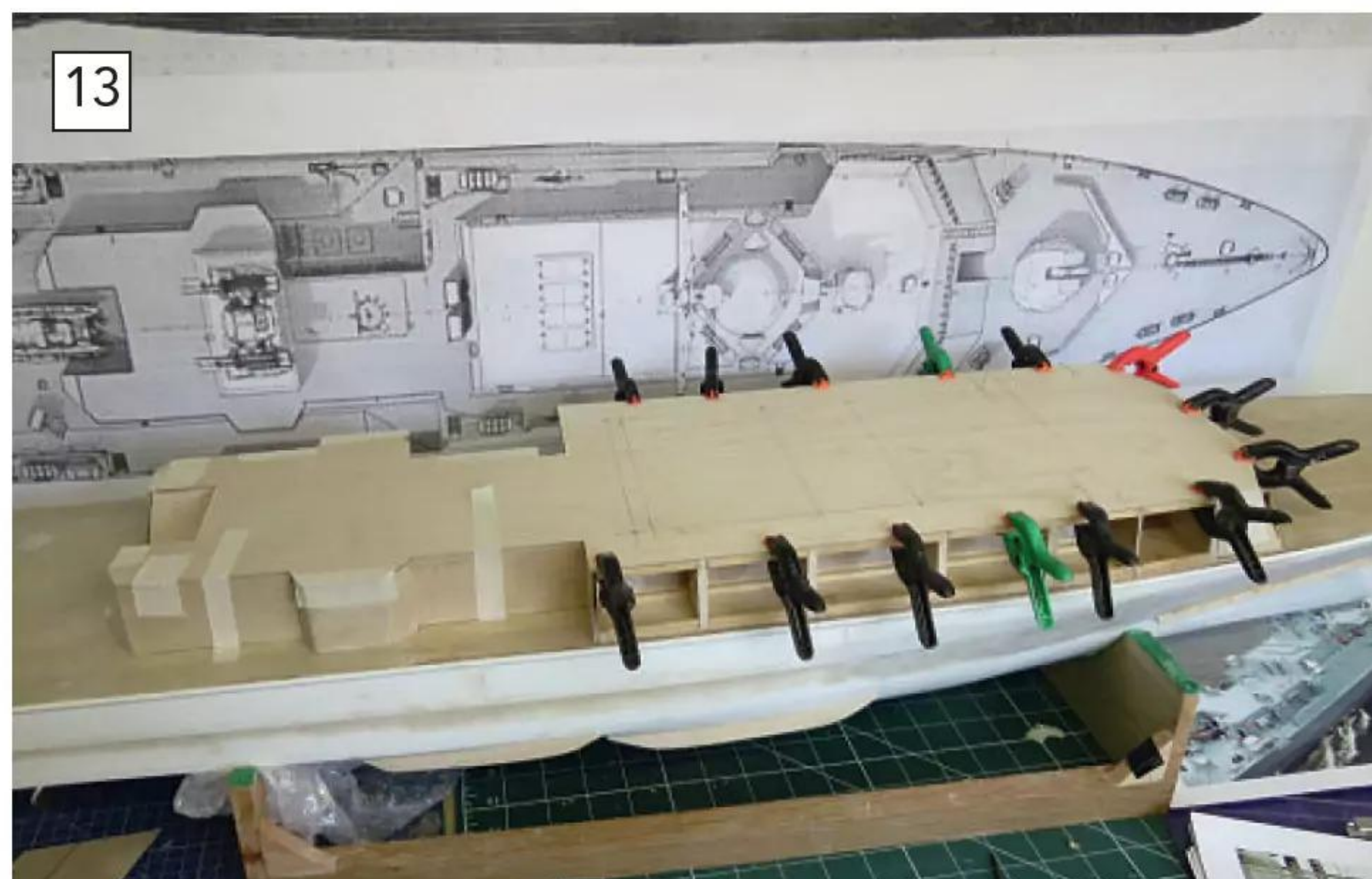
Having applied waterproof PVA, the inner edges to the openings are held firmly in place with plastic clips.



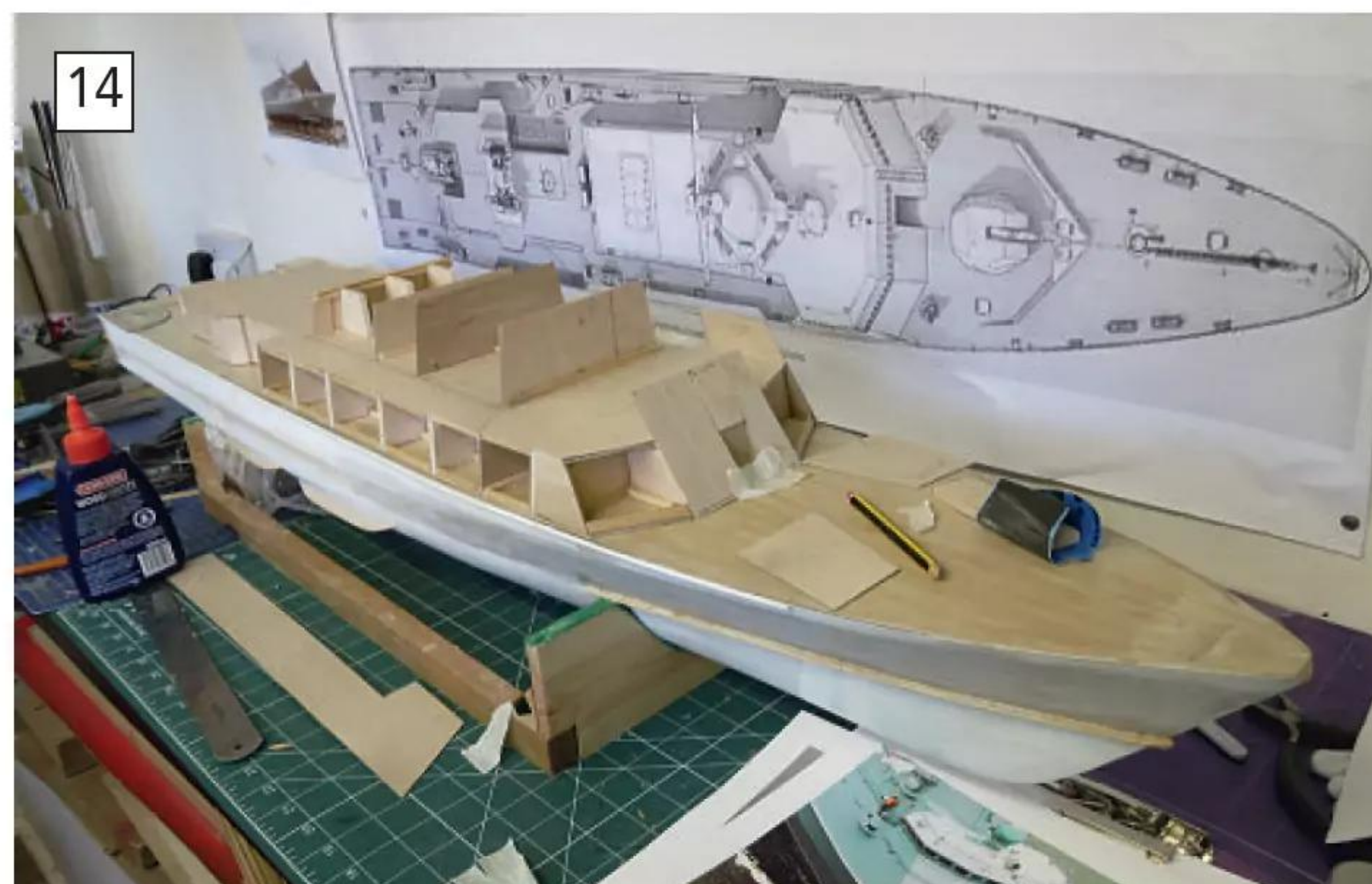
With the outer deck edge temporarily held in place with masking tape, a small weight is placed on the inner part of the deck.



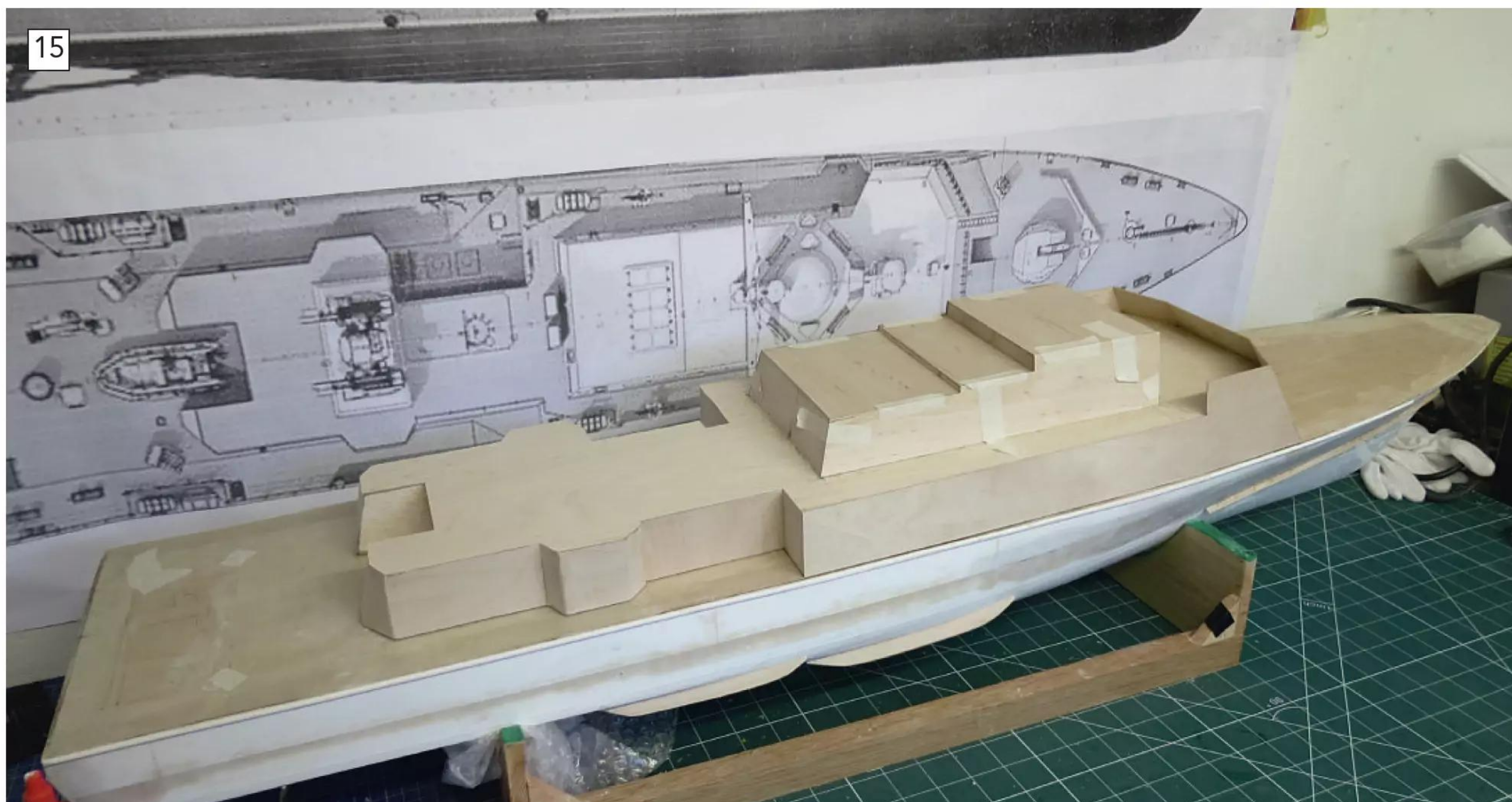
With the first level of the superstructure prepared, assembly can begin. Also at this stage, the two sets of bilge keels are fixed to the hull



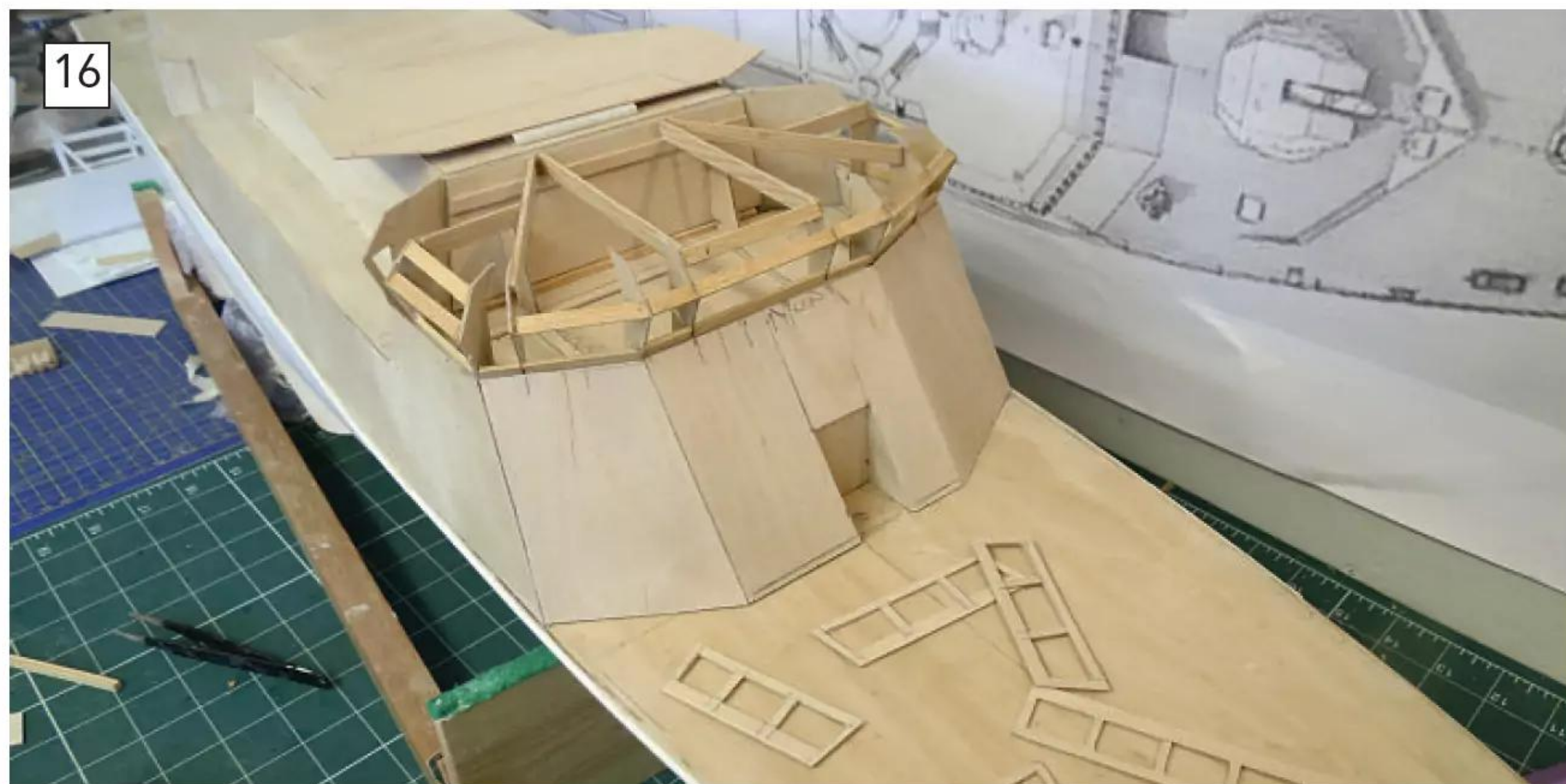
The 01deck cut to size and fixed into place.



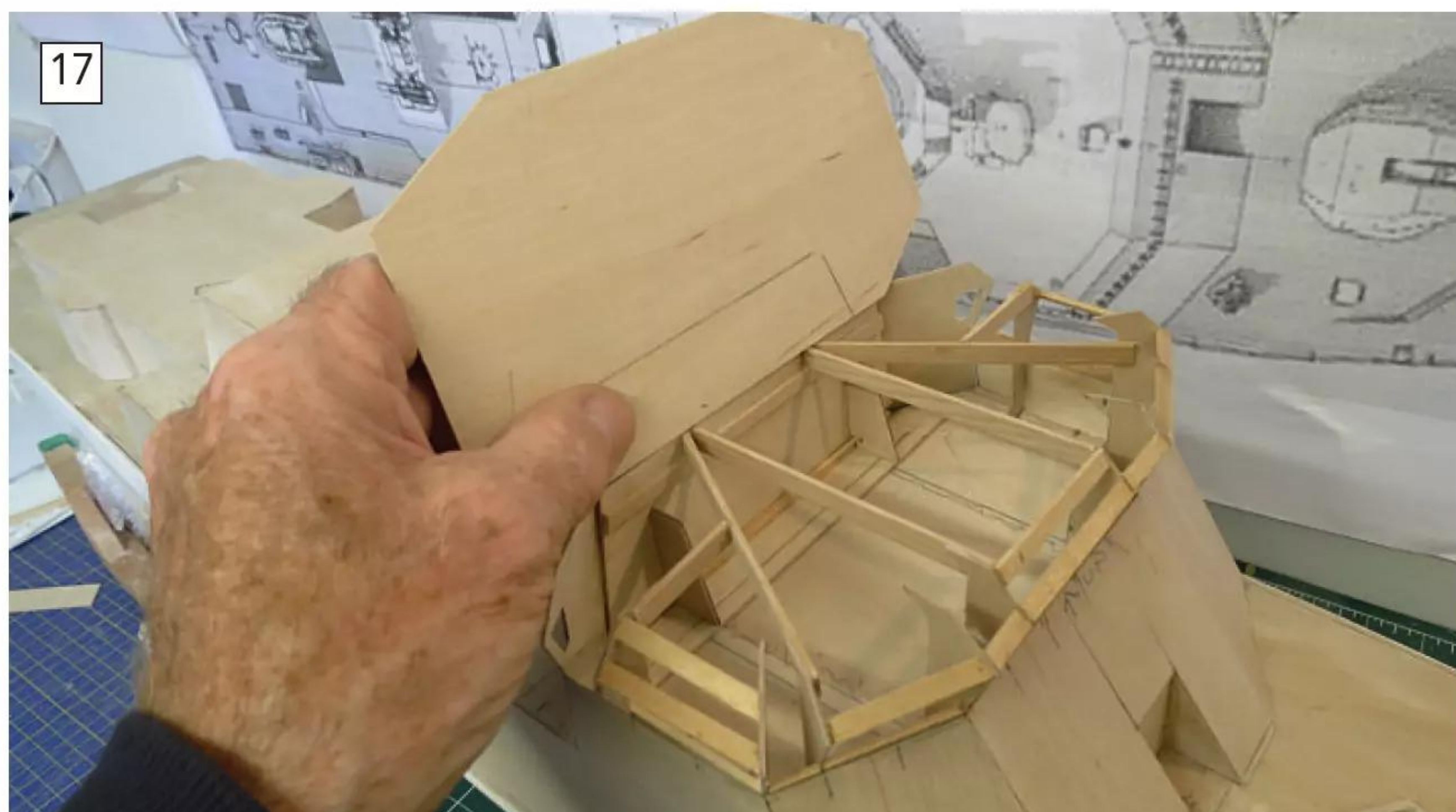
Commencing the upper level of superstructure and the forward centre panel of the bridge.



All the levels of the superstructure in place.



Building the support strips for the bridge windows and roof.



With the roof fixed into place, the bridge area can be lifted clear to enable glazing prior to painting.

The bridge

The windows in the bridge area (which at the front slope forward and then back towards the roof) were going to need glazing, so the bridge itself had to be removable. After some thought, a framework was constructed, with the window spaces cut to size from 1:32nd marine ply and the roof cut to suit (see **Photos 16 and 17**). 1:32nd marine ply produces very strong yet light upperworks, which in many ways are more durable than styrene, injection moulding or 3D-printed parts. As can be seen in **Photo 18**, at this stage the bridge was fitted but not fixed. **Photo 19** shows a 1:1 Karakurt being fitted out soon after launching.

Phased array tower and mast

Akin to the reduced RCS (Radar Cross Section), the phased array radar is

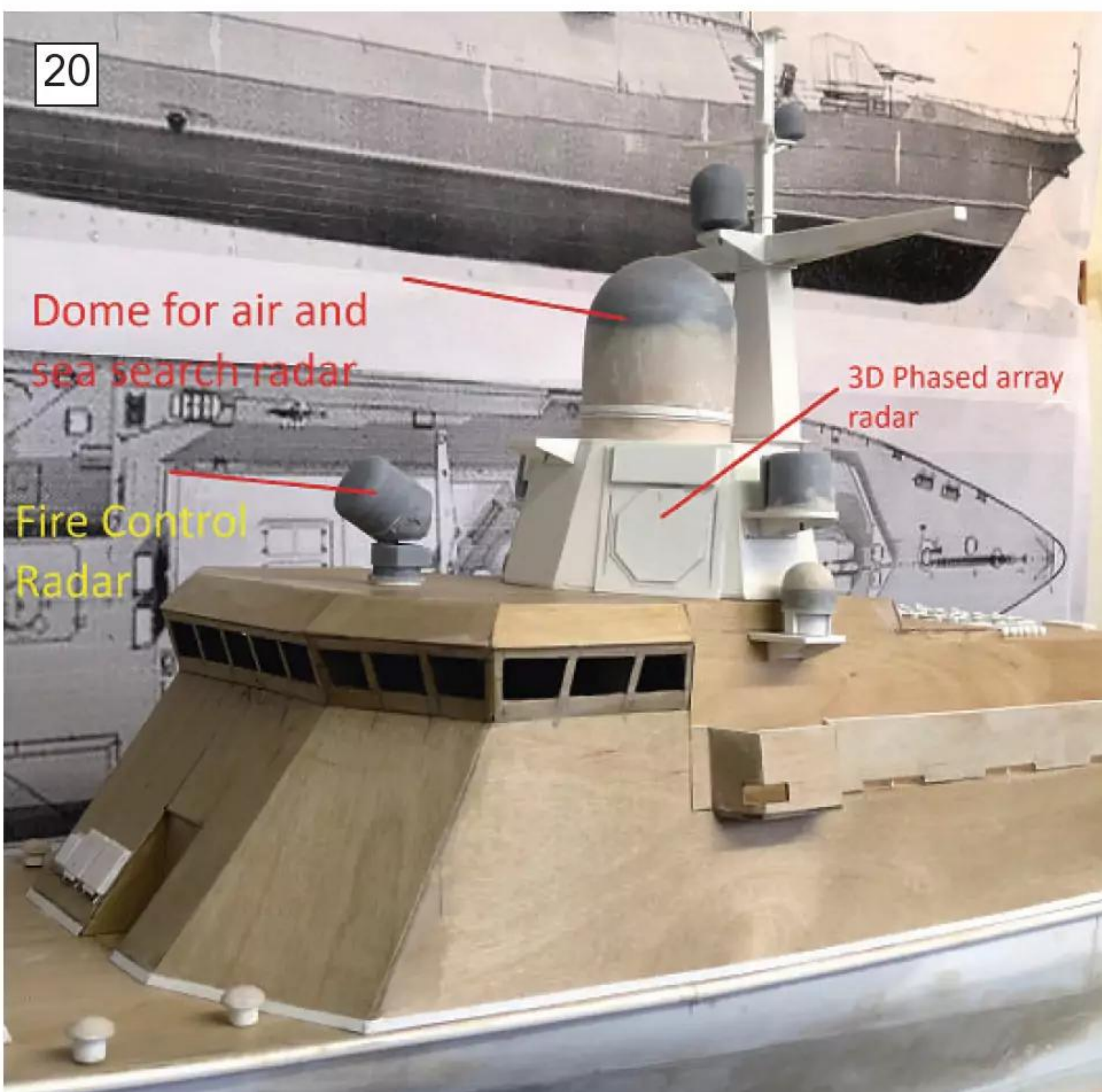
“To avoid possible damage to a 3D-printed part when removing all those support tags/sprues, immerse it, complete with tags, into a bowl of hot (but not boiling) water for about 30 seconds. You will find each of the tags/sprues will then become flexible enough to be simply pressed free”



Now the main superstructure has been prepared, work can begin on the octagonal radar tower and mast.



Each of the octagonal facets of the radar tower slope inwards, as evidenced by this image of the full-size vessel.



Each of the main fittings are added to the octagonal tower and mast platforms.



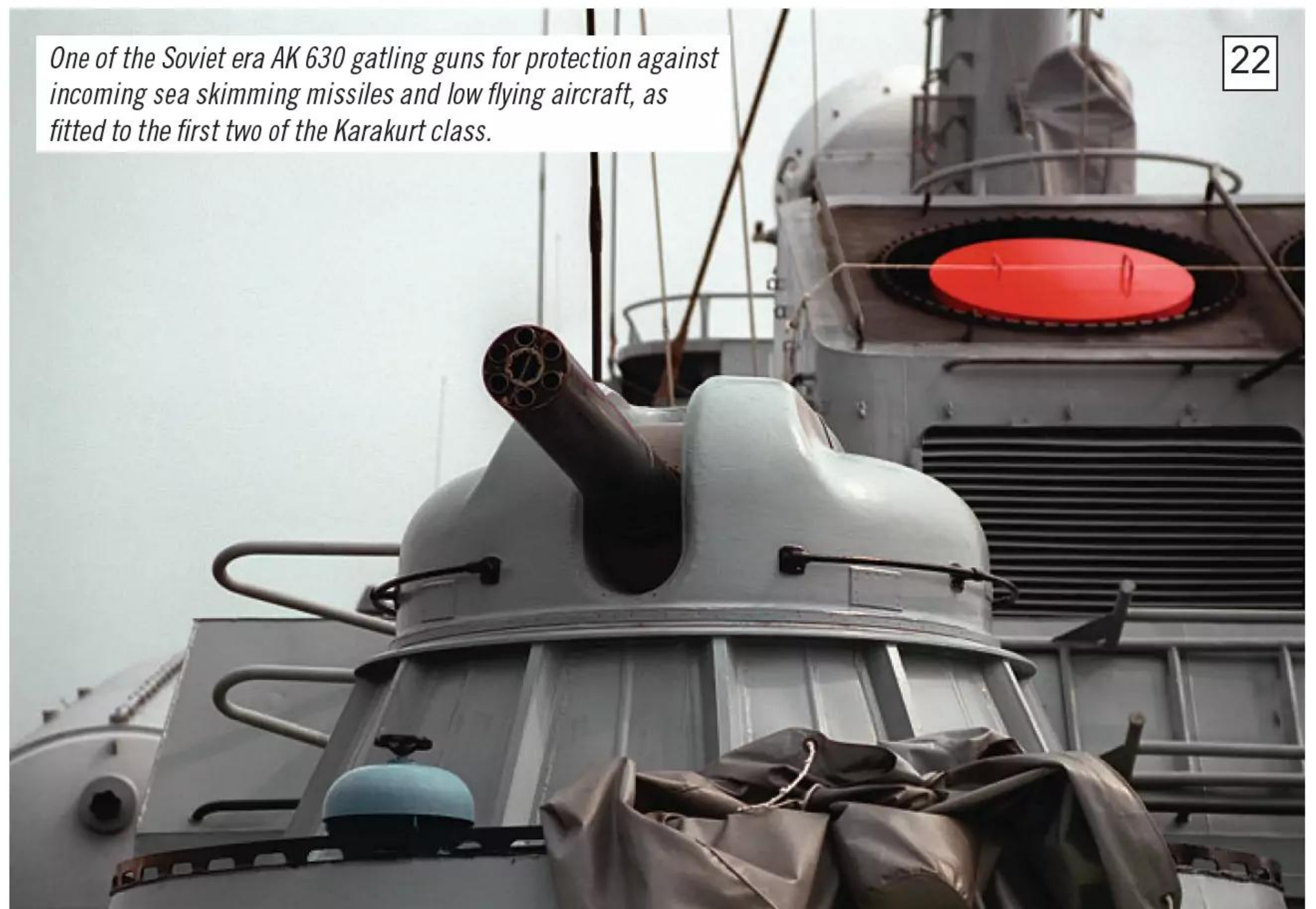
To the rear of the mast, at a slightly lower level, is the 8-cell VLS (Vertical Launch System).

mounted on an octagonal tower with slopping sides, and the ray dome for the Pozitiv-M 3D radar array sits atop that. For the model, part of the ray dome and the fire control radar were 3D printed by Mark Hawkins (see **Photos 20 and 21**), while the octagonal tower and main mast was formed using 1mm styrene sheet.

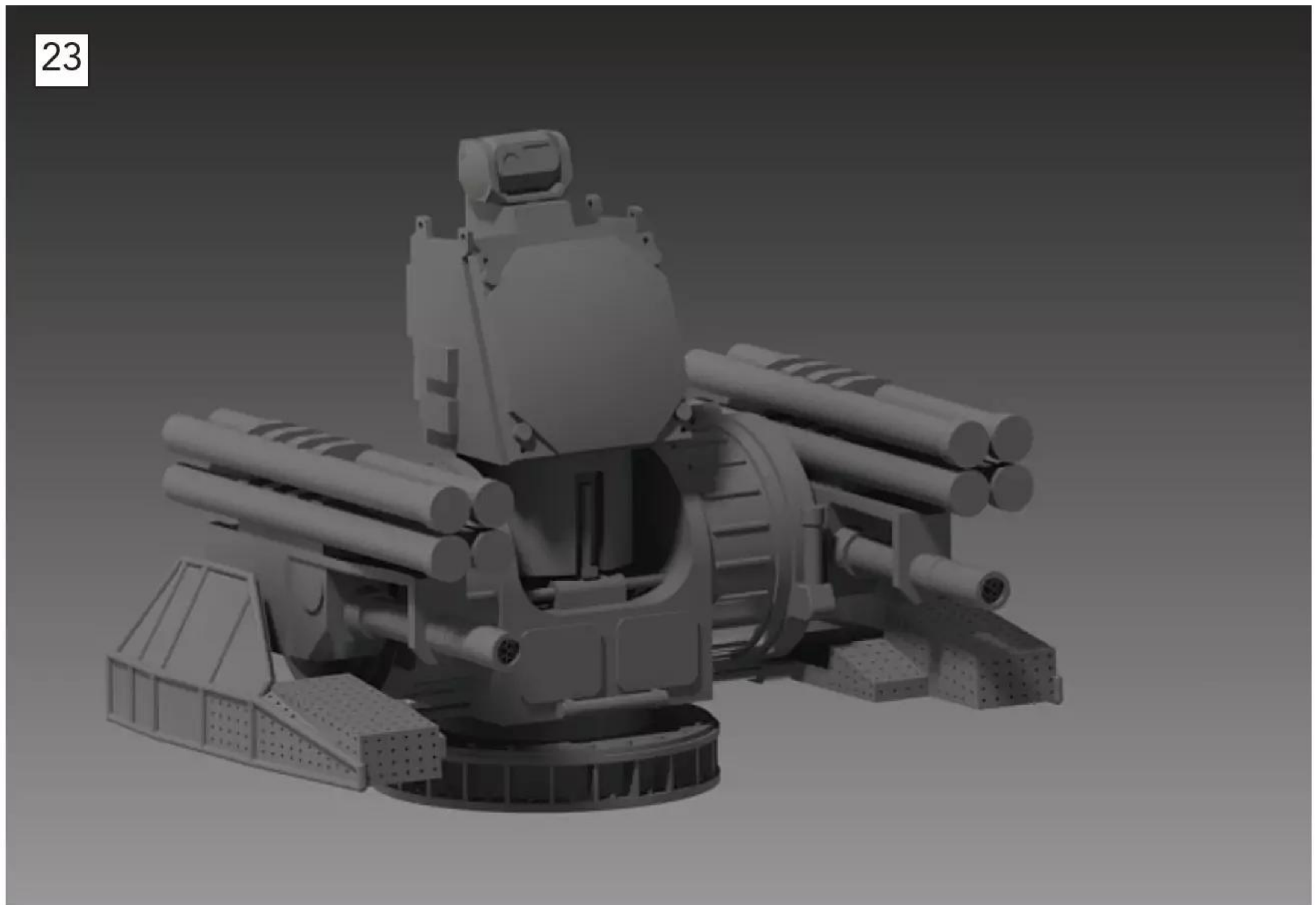
Forming the Pansir gun/missile CIWS (Close-In Weapons System)

As mentioned, the first two of the class were fitted with the AK630 gatling type close-in weapons system on either beam aft (see **Photo 22**). Subsequent vessels received the Pansir (a combined rocket/gun system) and an upgraded Kashtan, capable of engaging targets out to a range of 20 km.

Previously I had scratch built the Kashtan at 1:72 scale for another



One of the Soviet era AK 630 gatling guns for protection against incoming sea skimming missiles and low flying aircraft, as fitted to the first two of the Karakurt class.



A 3D rendering compiled by Mark Hawkins for printing the 3D model.



One of two 3D produced gatling type guns directly from the printer.



The model and sprue/tabs being immersed in warm water for approximately one minute.

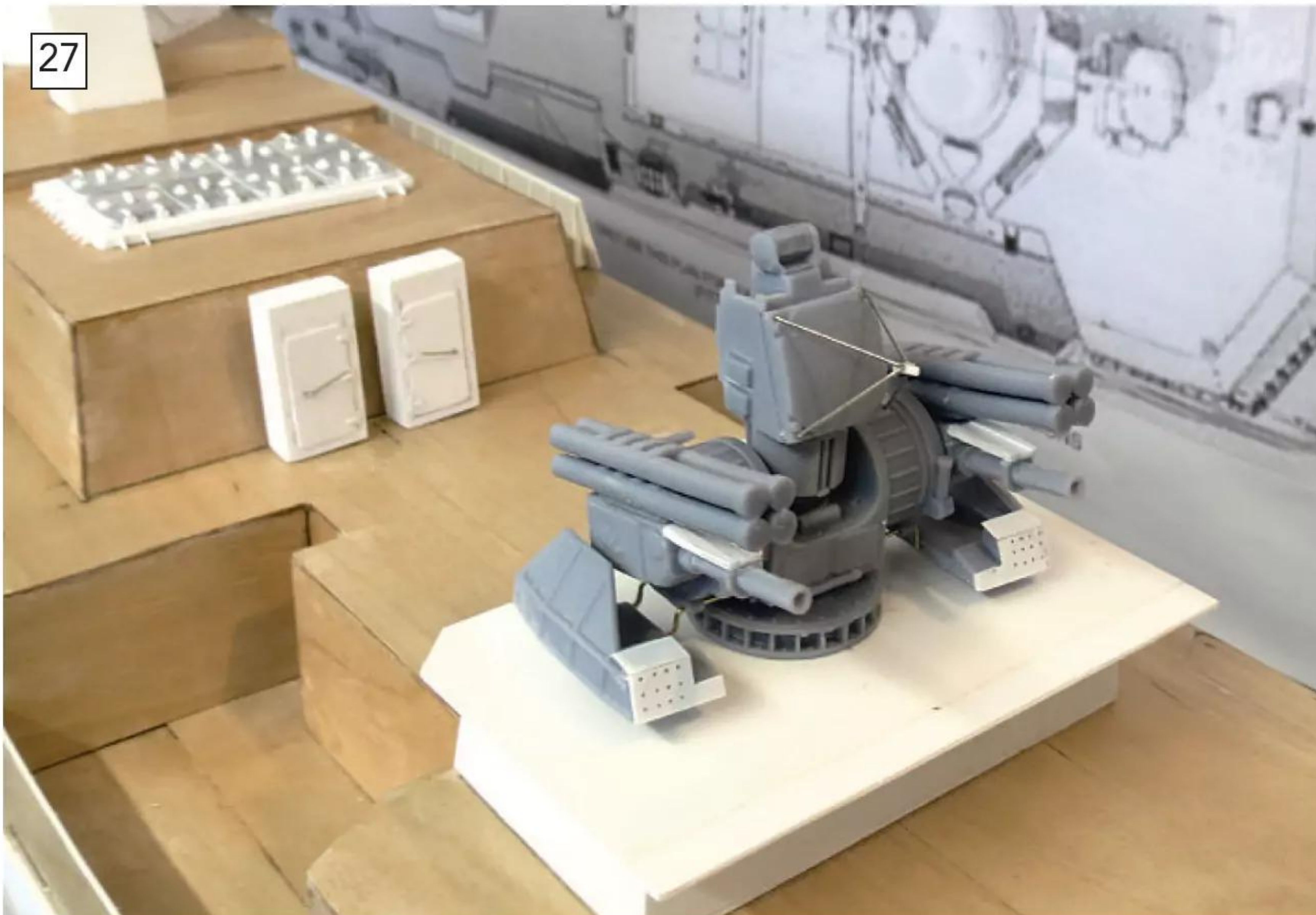


The parts that make up the Pansir are now completely separated from the sprue.

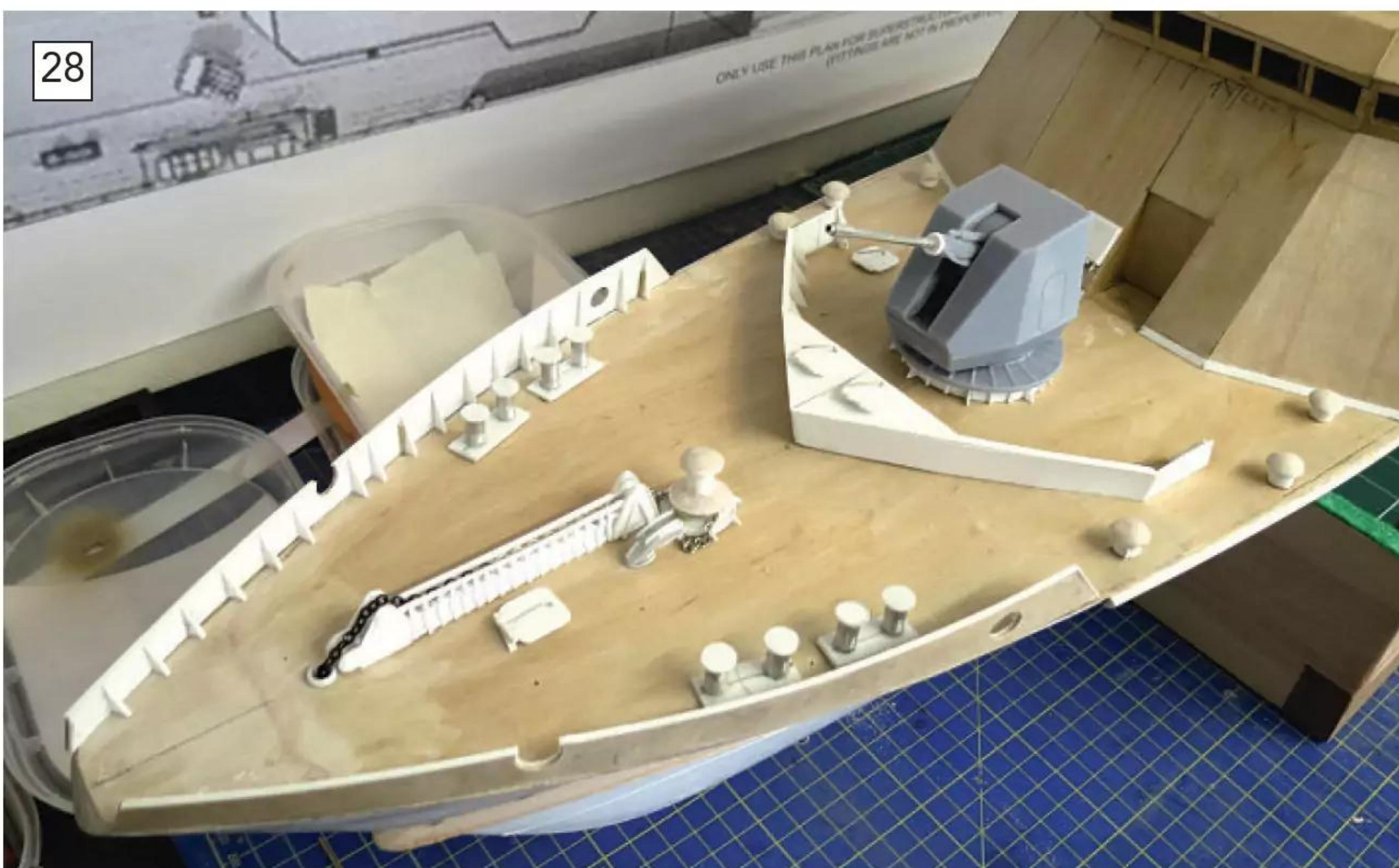
project. Mark Hawkins, however, suggested that a 3D model of the Pansir (see **Photo 23**). This, he explained, could be made in days rather than the week it had taken me to build the Kashtan. So, with this offer gratefully accepted, the resulting parts were prepped for assembly (see **Photos 24-26**). A quick tip here: to avoid possible damage to a 3D-printed part when removing all those support tags/sprues, immerse it, complete with tags, into a bowl of hot (but not boiling) water for about 30 seconds. You will find each of the tags/sprues will then become flexible enough to be simply pressed free (some sanding of the surface of your sprues/tags may still be necessary). **Photo 27** show the constructed 3D creation positioned on its raised platform.

Fittings

There were a host of other fittings that I scratch built, but due to space constraints I'm unable to detail all the constructional methods involved. I can, however, highlight several critical areas where many of the fittings (some of which may be unfamiliar) are concentrated. For example, on the forecastle the anchor cable is lifted clear of the deck in a raised trough (see **Photo 28**) – something peculiar to Karakurt. Fixed to the bridge roof are a large cluster of aerials (simple enough to make and fit) which are set slightly back from the perimeter edge, thereby allowing clearance for fitting the safety rail surrounding the roof space (see **Photo 29**). And, to close Part 1, **Photo 30** offers a view of the developing forecastle area. In this image, the turret housing for the AK176 gun you see was 3D printed; only the barrel and fittings were scratch built from aluminium and brass. In the immediate foreground, and ringed in red, is the PK10 decoy



The fully assembled Pansir installed on its raised platform.



Coupled with the method of dry assembly, a brass pin is inserted into each of the smaller fittings prior to locating. A good example of this is the fitting out of the area forward of the bridge.

dispenser system; this was covered in detail in my feature about the construction of the *Soobrazitelnyy*.

Next month

In Part 2 we will be taking a closer look at some of the fittings, such as the knuckle boom crane, and the methodology employed, e.g., when forming the five bar deck edge rails. Plus, of course, I'll be finishing things off with details of striking camouflage scheme applied to my Karakurt. ●



Locating the various fittings on the bridge roof.



Prior to painting all the fitting and structures, carrying out a dry fit will help you establish the correct location for everything, thereby ensuring assembly is straightforward and stress-free.

References and Acknowledgements

Online points of reference

- https://russianships.info/eng/warships/project_22800.htm
- <https://www.naval-technology.com/projects/project-22800-karakurt-class-corvettes/>

Sincere thanks to:

- Peter Brown, naval architect, for the superb modellers' draft of the *Karakurt*.
- Mark Hawkins, for his impressive 3D work for *Karakurt*.

- Mountfleet Models, for the *Independencia* hull
- George Sitik, for the propellers.



AN CAILIN ALAINN, PART 1

Tony Judd provides a pictorial guide to how this gorgeous 1:8 scale Galway hooker was modelled

When I first came across video footage of these old boats racing in Galway Bay on YouTube, I was immediately struck by how fast they were, and how close to the wind they could sail for 19th century sailing boats.

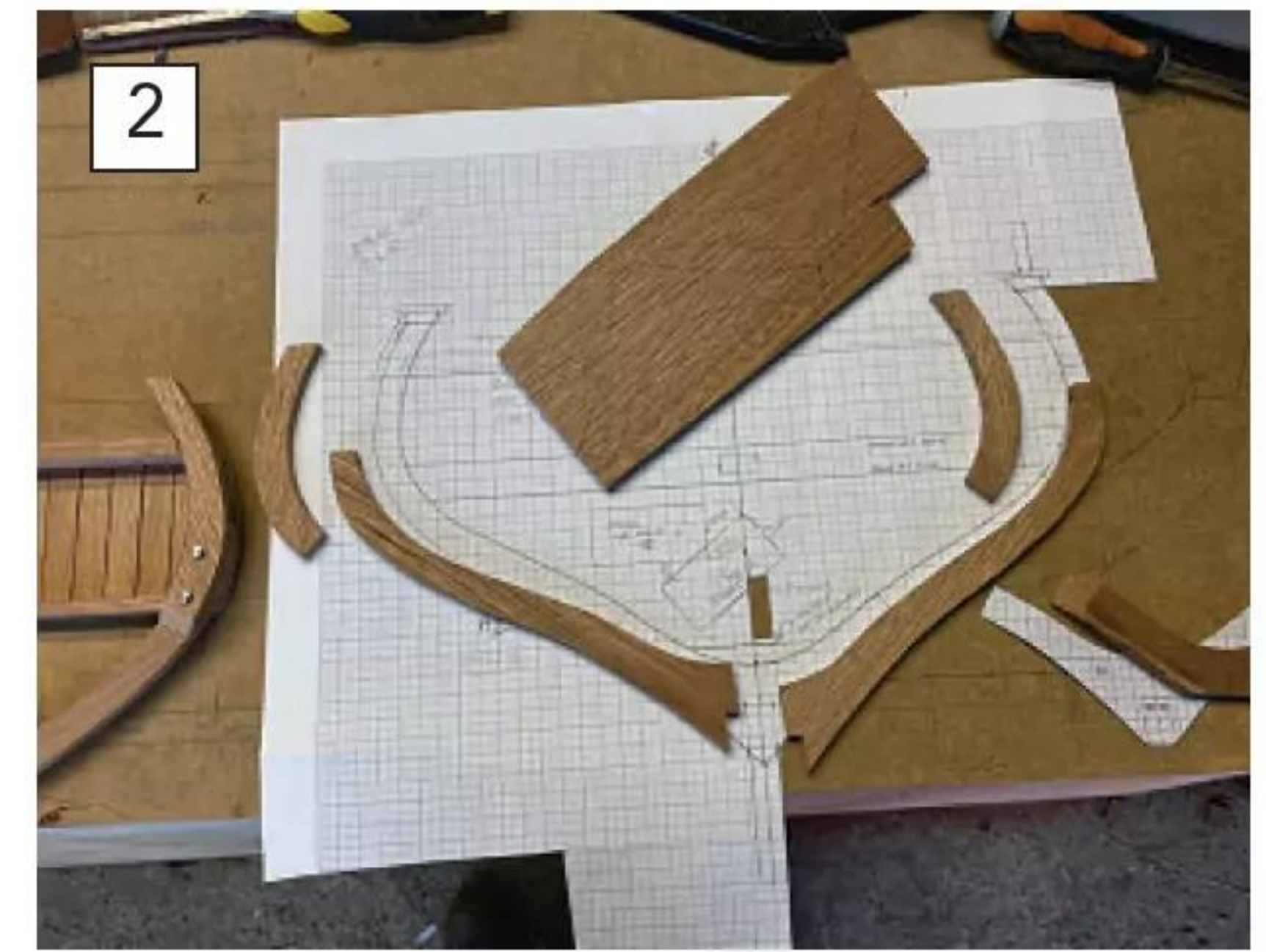
With my interest piqued, I began to do some further research and it turned out there was much more information to be found in other videos, including one featuring the step-by-step build of a replica. During this video a book was

mentioned, *The Galway Hookers* by the now late Dick Scott. When first published this would have cost £12, but copies are currently changing hands for up to £100. Fortunately, I managed to acquire myself a reasonably priced secondhand copy and wasn't disappointed, as it contains a wealth of information, including lines plans, photos, timber sizes and thicknesses, etc, plus loads of anecdotal reading that offers a much better insight into these distinctive beauties.

Now, I have a passion for modest period working sail, especially open boats that show the rough and ready framing inside, all encapsulated in a beautifully faired hydro-dynamic hull. I'm talking smaller fishing boats mostly. One of these beautiful Workhorses of the West, therefore, was an obvious next project.

Model philosophy

The aim of each of my projects has been to build a working sailing model that both looks and behaves



the meantime, though, it was regularly retested to make sure it was still tight.

Why do this? Well, because it's easy to achieve a very neat finish inside and out, and because it's closer to reality.

The build of the model (whose name, in case you were wondering is pronounced *An Coleen Ahlynn*, which translate into English as 'Lovely Girl') I will document visually, with what's being shown in the numbered illustrations explained below:

■ **Photo 1.**

The midship 'floors' lined up by sight before securing.

■ **Photo 2.**

The 'futtocks' and 'tops' of a midship frame, with a completed bulkhead just to the left of picture.

■ **Photo 3.**

The hull centerline, in 14mm sapele, with keel apron, and a line of 5mm SS studs cemented in to transmit the loads created by a 9kg ballasted fin keel.

■ **Photo 4.**

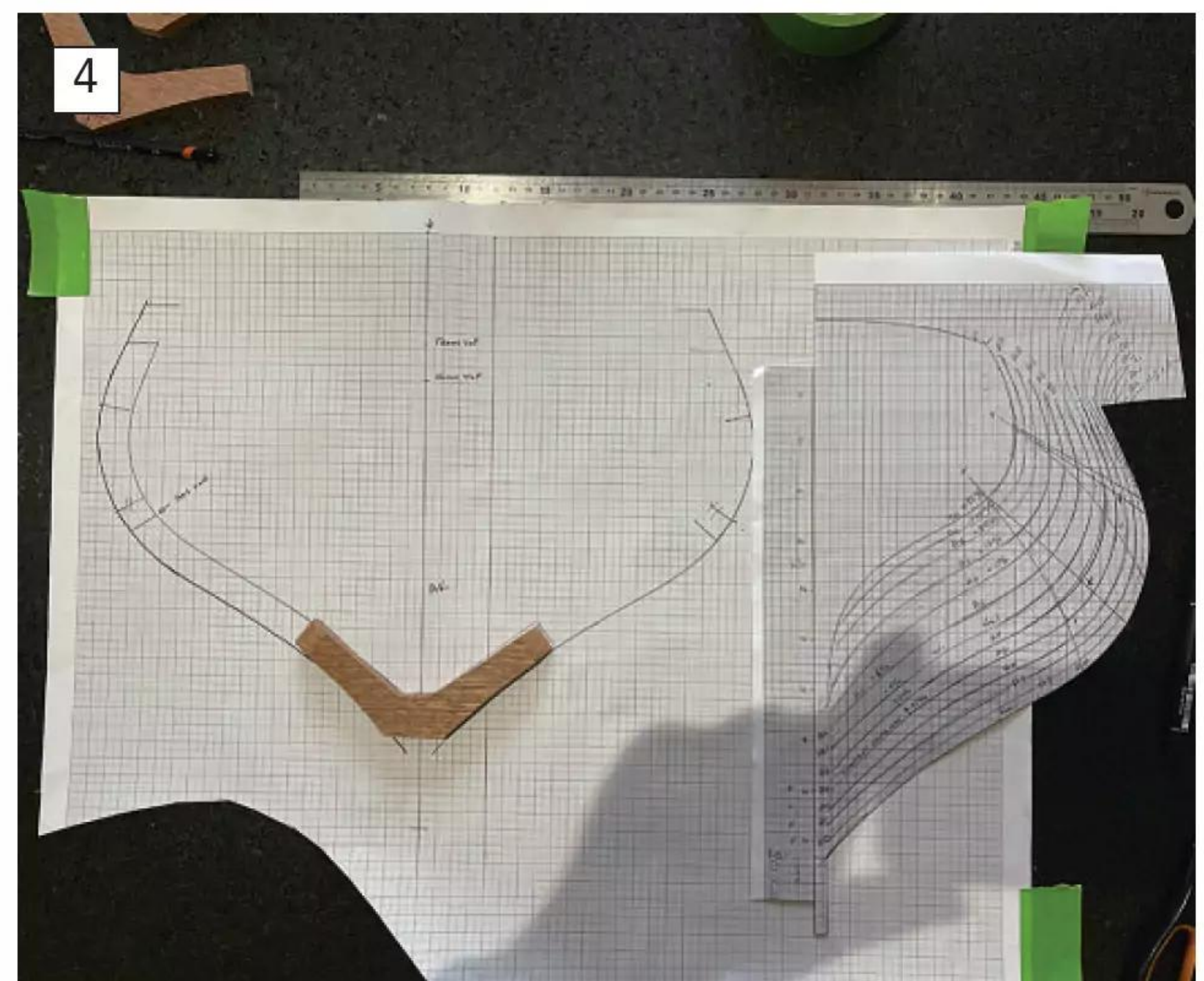
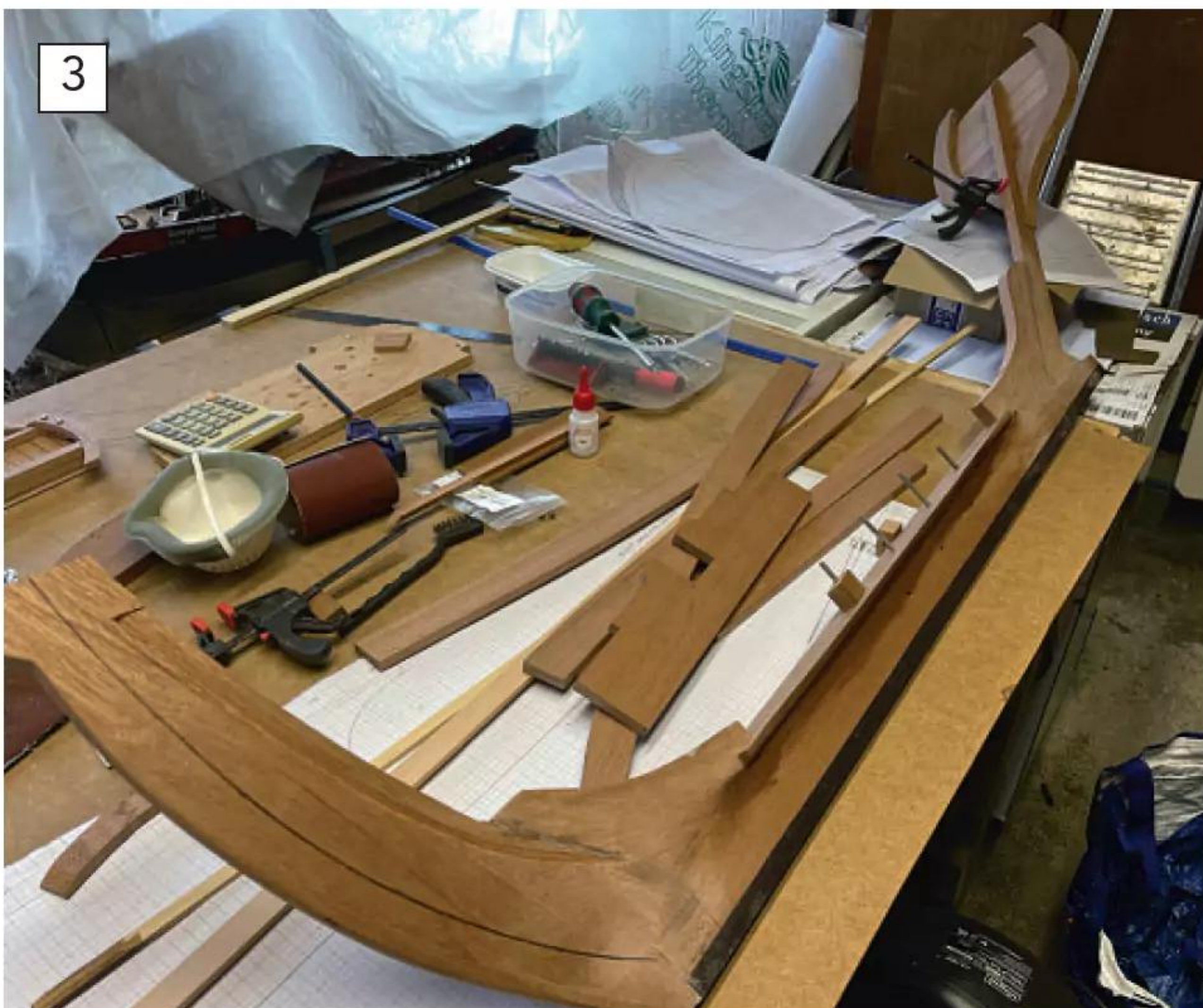
One of the 'floors', which all have horizontal wood grain, checked to the frame drawing, with a number of frame profiles drawn alongside right.

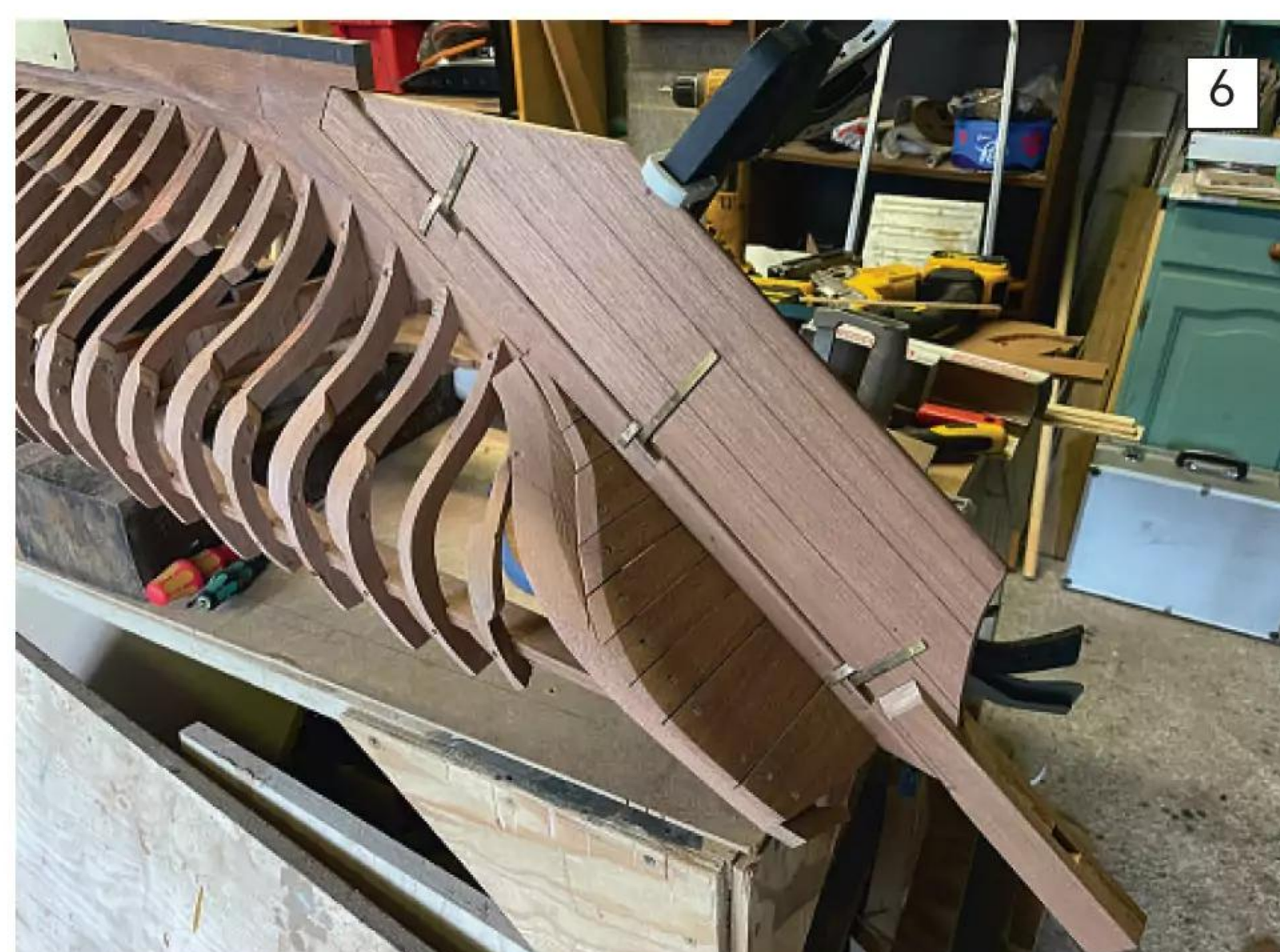
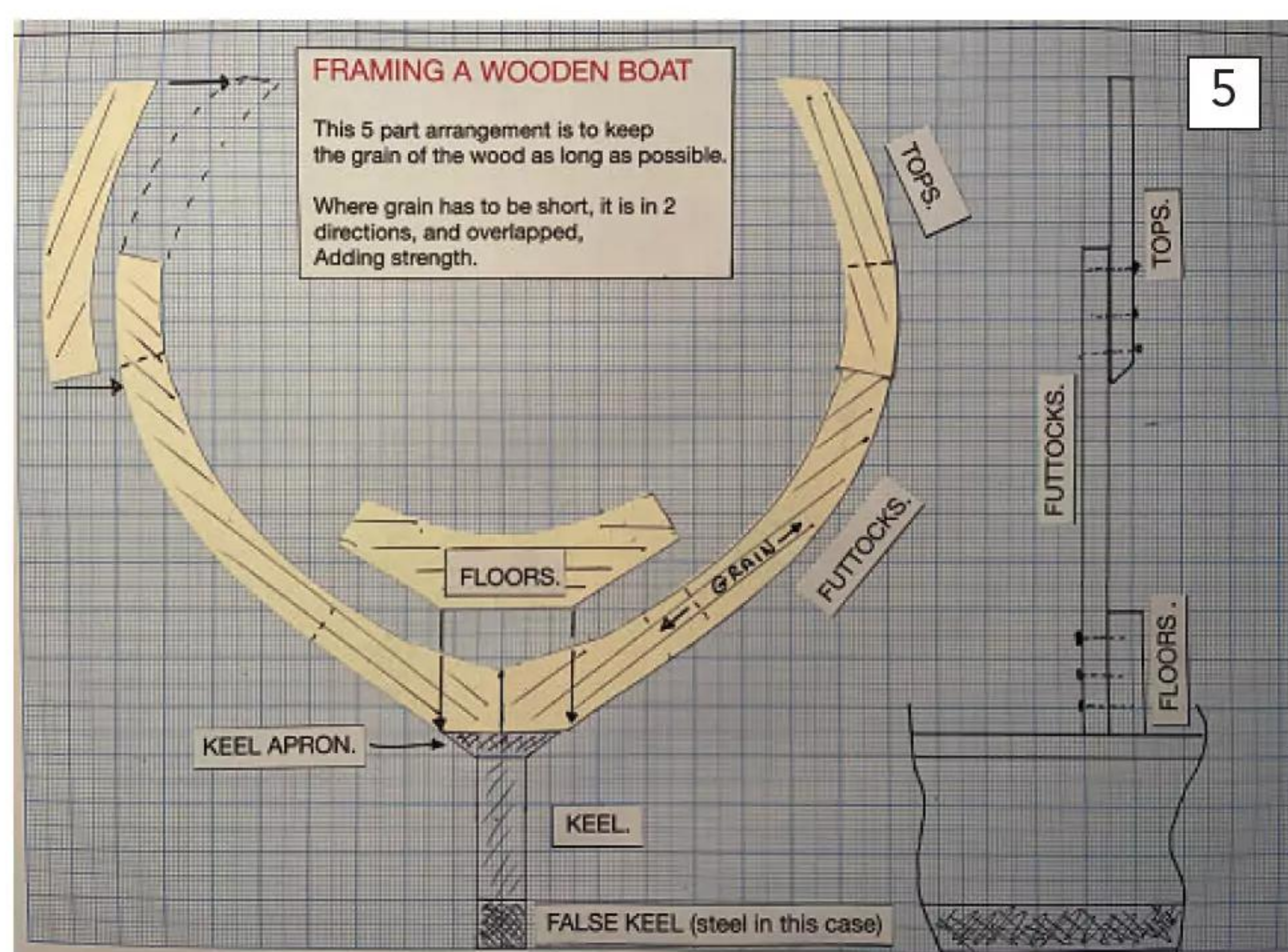
"Why do this? Well, because it's easy to achieve a very neat finish inside and out, and because it's closer to reality"

as realistically as possible on the water while also standing up to closer scrutiny as a static exhibit; this means a wooden hull, cotton sails, plenty of well-hidden radio-control, and, above all, as big a model as possible, with a close ratio scale (1:8 for smacks and 1:12 for barges). This model, therefore, would be built to 1:8 scale, with a 1535mm hull length and mast height, 450mm beam, 400mm draught, including a weighted fin keel, with a total weight of 83lb, or 37kg, and about a 40% ballast ratio.

As I had sufficient data, I resolved to build carvel, plank on up to 5-part frames, exactly as per the 1:1 vessels, and screw fix the planking and caulk with linseed oil putty – no glue. Following advice, I chose to work with Obeche, using Sapele for the frames and centerline.

The first job was to make a test 'tank', planked and caulked, to prove and evaluate my proposed method of build. This 'tank' would later become the casting box for the lead ballast bulbs (as illustrated in Photo 14). In





■ Photo 5.

This diagram demonstrates the principle of the 5-part sawn frame, showing how woodgrain is kept as long as possible for strength, and how when short grain must occur it should be overlapped so that it is of double thickness and cross grained. Towards each end of the hull frames become 4-part, with no floors, as they straddle the deadwoods. Finally, right in the bows the frames are 2-part, with one piece to either side and running almost straight.

■ Photo 6.

Fully framed and shot from the aft end, upside down, showing the severely raked transom and large rudder, which is only about 30% bigger than the original, created by adding a further plank.

■ Photo 7.

A bow shot once fully framed, but with some trimming and fairing still to do.

■ Photo 8.

It took six of the 13 months build to get to this stage. The centerline, the two bulkheads, and the massive beam shelf assembly, built complete with knees and thwarts, when erected gave the fundamental dimensions of the hull. The frames were constructed as per the drawings between the bulkheads where the shape doesn't change much, but outside of those (bow and stern) it was a case of 'building by eye'.

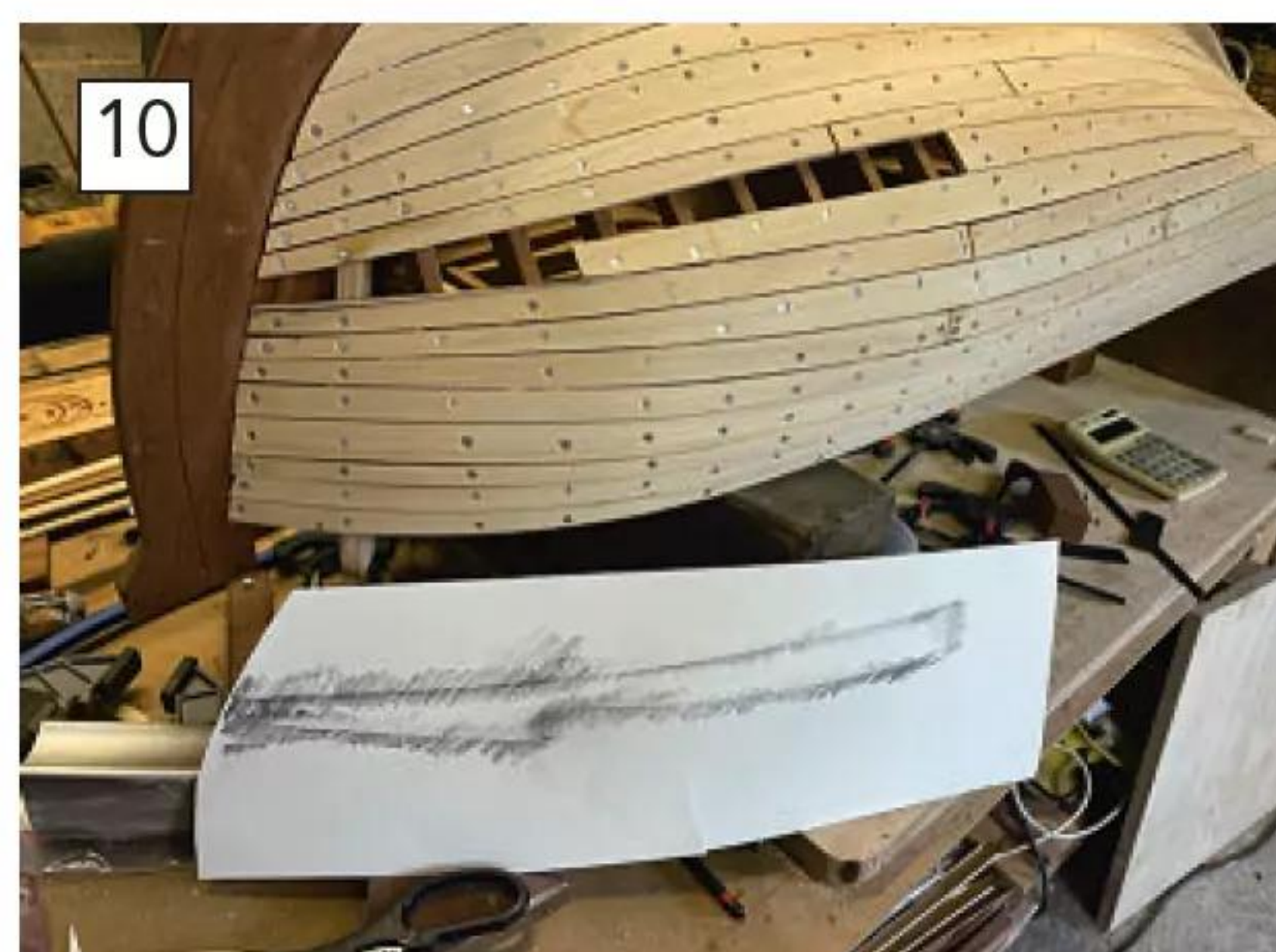
■ Photo 9.

Planking proceeds: 60mm x 4mm laths were used to cut a banana shaped plank, never more than 25mm at the widest, tapering to some 20mm aft and 10mm forward. Establishing the shape turned out to be more straightforward than expected. One must remember



that each edge must be a straight line, no matter how curved it is!

Planks were attached to the 8mm wide frames using tiny No. 2 countersunk slotted brass wood screws, 9.5mm long for the easy areas, and No. 3 (2.5mm) as above but SS and 12.7 or



"Each edge must be a straight line, no matter how curved it is!"

16mm long for the stress areas. Only being able to source 3mm or 4mm diameter countersinks, 4mm had to be used. Brass nails, with tiny heads, would have been lovely, but the structure isn't firm enough to ease these in, even when a pilot hole is drilled. Plus, it would have been almost impossible to withdraw these nails should any changes be required at a later stage.

■ **Photo 10.**

The closing piece: the method used here involves making a 'brass rubbing' of the hole on heavy gauge cartridge paper. This needs to be cut slightly



oversize and paired down until it fits, before then drawing round it on to the plank and cutting out the shape, easing down until a fit is established.

Planks were spaced with 1mm plasticard tabs, but often the gap was 2mm, which seemed enormous. Tests, however, showed it to be ideal for caulking or gluing, leaving an acceptable width seam.

■ **Photo 11.**

The hull fully planked and ready for caulking: the planks used were 4mm thick and almost all of them went round the bows without the need for



“This holds everything together and prevents splitting”

hot wet bending. A good tip here is to ease them over time, and don't point load them (with a screw). At the bow, which is very narrow and has a screw hole and countersink, the finished end was soaked in good quality superglue (here HAFIX was used). This holds everything together and prevents splitting, while still being flexible.

A 6.35mm thick 'belting' plank was run full length, close to the top of the hull. The bow end of this was hot soaked for 20 minutes, then clamped over a former, kept wet for several hours with soaked rags and allowed to dry before being removed. Although

you'll find that in time this almost straightens again, having been bent to shape once it will let you do so again (carefully, of course) when dry and cold.

The Obeche chosen for planking is about one step up from balsa wood in terms of being light and porous. The caulking process involves putty being troweled and forced into the seams, and this works best if the planking is soaked in boiled linseed oil as you go. This oil lubricates the putty into the seams but will eventually set to a very tough resin, running right through the wood, waterproofing, toughening and also gripping the caulking, whose solvent is also boiled linseed oil.

“The result is the sort of hit and miss messy seams that working sailing boats had. Don't try this on your model of Britannia!”

We owned a 34ft gentlemen's mahogany narrow beam river cruiser for several years, and I discovered from this that putty caulking is your worst enemy when it comes to trying to rake it out. It's unbelievably tough. I also learnt that you could repack a length of seam below the waterline with putty, refill the dry dock overnight and motor out and downriver the following morning, without ever having to think about the repair again.

■ Photo 12.

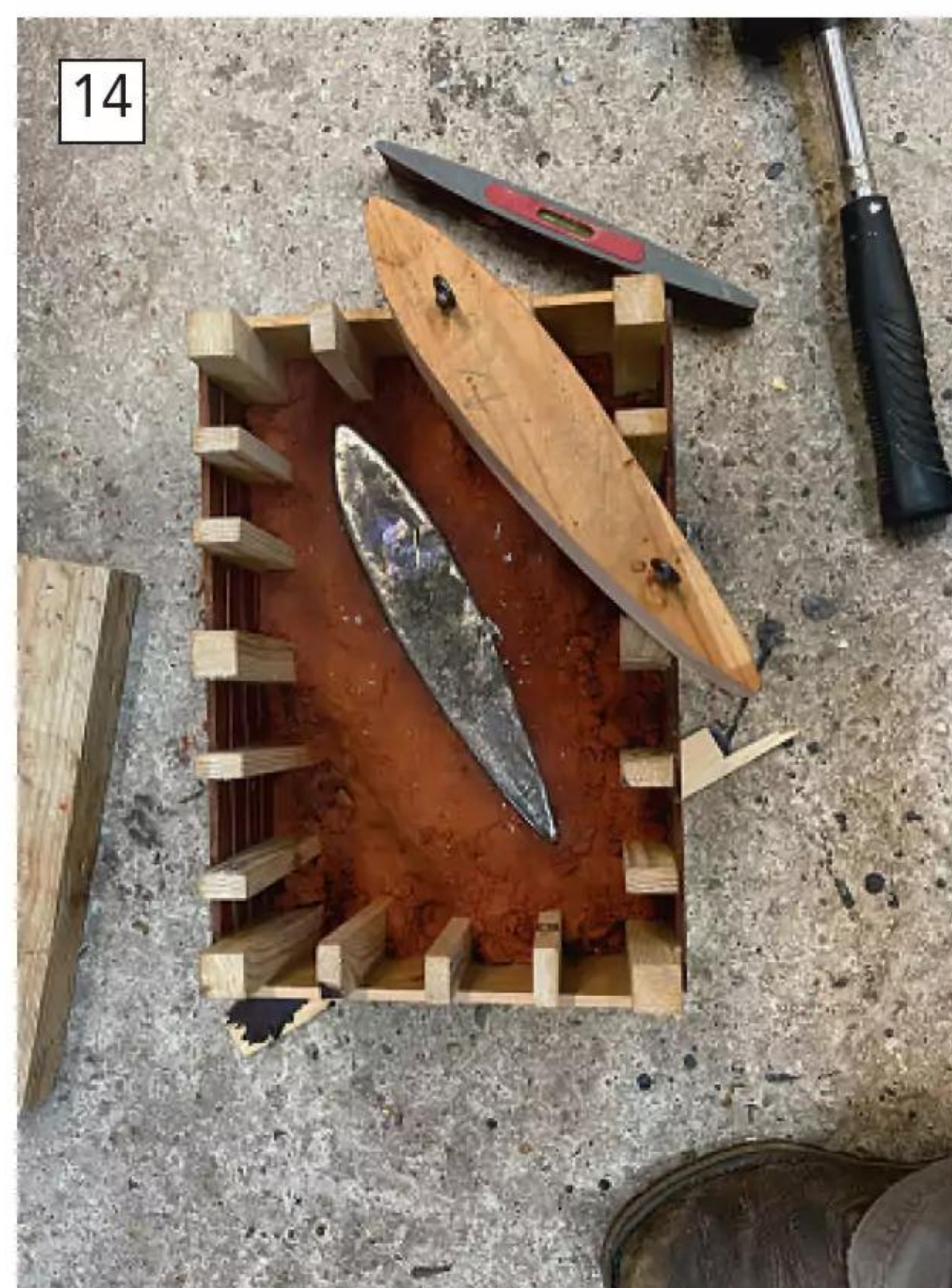
The first real view of the hull shape.

■ Photo 13.

I ducked a laid deck on my first two models, but not here, where I used 2mm thick Sapele, superglued to a ply backing and caulked with roofers' mastic, which took up to three applications to fully fill the seams. The result is the sort of hit and miss messy seams that working sailing boats had. Don't try this on your model of *Britannia*! Again, soaking the whole deck in boiled linseed oil immediately beforehand meant that the excess wiped off without darkening the planks much. If doing this yourself, though, be sure to get this oil out of your seams.

■ Photos 14 & 15

I decided to repurpose my caulking test box as a casting box. A wooden plug was set into the casting sand



16



and a level used to ensure it would fill evenly with molten lead. Two weights were then cast, trimmed down, encapsulated with epoxy, rubbed down, drilled and secured to the fibreglass fin keel.

Incidentally, my first boat had an exaggerated depth of keel and internal ballast. She is a doughty sailor but heels a fair bit and is slow to tack. She also doesn't look quite right on display.

My second boat, a Severn Trow (a decked sailing ketch barge), which featured in the March and April 2022 issues of *Model Boats*, featured a ballasted daggerboard (doesn't swing up) through a centre board case. This boat is stiff, tacks easily and, of course, can be displayed with the board removed so she looks like a scale model. Her long sail plan and flat bottom, however, do make it difficult to sail her in a straight line as she seesaws about the board. As a result, maximum concentration is required.

By chance, this new model employs a third method. This is because I couldn't have a centreboard case in an open boat without it looking wrong, and there wasn't the space either. So, the board, really a fin keel, attaches externally and, again, the weights are added afterwards. This works on all

fronts very well indeed, but a lot of care and thought went into transmission of load through the hull between the two opposing forces: the mast and sails try to lay down and lift the weight, while the weight forces the mast back up again against the wind's puff.

■ Photo 16

This boat sails like a witch! The hull gives directional stability, the fin keel allows for fast and assured tacking and gybing, the severely raked transom cancels out the stern wave, and she does not tow water. This makes her very fast. The hollow bow and the weather helm cancel out leeway. Weather helm is a feature of almost all traditional sailing boats. To sail in a straight line, the tiller (helm) has to be pulled up towards the windward, or weather, side of the boat, (the side the wind is coming from). This has the effect of pulling the stern up towards the weather. With the bow wave cushion under the hollow bow, we now have water piling up on the opposite side of the hull, the lee side, at each end, which together virtually cancels out leeway. Leeway is the sideways drift of any boat caused by the wind on one side, and the effect is at its worst when sailing to windward, which is why

"This boat sails like a witch!"

sail boats have deep keels, fin keels, centreboards or leeboards, to reduce this effect.

The boat is close winded, so charges the waves at 45 degrees, leading to a high bow wave and spray that can wash into the sunken foredeck of both the model and the real thing. On the latter they accepted this draining inside the hull and aft to the bilge pump, but for the model this water is passing a lot of electrics. I had considered fitting a pipe each side that drains from the aft lower corners of the deck, through the hull skin and overboard. This is tricky and the risk is that when heeled over sailing fast and close to the wind, the water may come up the other way, as the discharge end of the pipe would be under water.

Next month

In Part 2 we'll be looking at the 5-channel controls and telemetry, the bilge pump and float switch, mast and spars, the all-important sails, and the reefing arrangements. And, of course, I'll be showing you some more shots of the finished model sailing. In addition, I'll divulge the method I used to prevent this heavily ballasted model from sinking if swamped. ●



The GP hull gunboat & paddle warship

Ashley Needham shares two more top ideas!

For those of you who are new to the magazine, the concept for a GP hull that could be fitted with interchangeable tops first came to me during the Covid lockdown. To try the idea out, I first built *Mintanic* on a hull which had a removable centre and rear decks (see the May 2024 issue of *Model Boats*), before then going on to create three more sets of decks and masts – these tops providing me with four very different ships to play with.

The next step was to create a bigger hull, with plain straight hull sides, onto which a greater variety of tops

could be fitted, starting with a disco paddleboat top (for full details see the July 2024 issue of *Model Boats*).

So, having already outlined how to build that hull, let's now move on with two very interesting and unusual top ideas...

Crimea gunboat HMS *Gleaner* 1854

A particular type of vessel made its appearance in the 1850s during the Crimean War: the gunboat. Small and of shallow draught, these vessels were designed so that they could venture

close to shore or into river estuaries and bombard fortifications, ports or vessels at anchor, reaching places that larger deeper draughted vessels could not. For this, they carried just two large cannon and were steam-propelled with single or twin screws. Typically, one 68pdr and one 32 pdr would be mounted and, if you consider the largest main gun on the *Victory* was a 32pdr, you'll get some idea of the firepower available from a vessel typically between 100 and 200 feet long! If you take my 38mm figures to be 6ft tall strapping sailors, then



the vessel works out at approximately 102 ft long and 20ft wide, and these dimensions are close enough to the very first gunboats of the Gleaner, Dapper and Albacore classes.

Early paddle warship, HMS *Tartarus* 1833

The Admiralty began building paddle steamships in the 1820s, at first to act as simple harbour tugs, but it was also envisaged that they could tow larger ships into action in unfavourable winds. By the 1830s much larger and well-armed paddle boats had been built, as the Navy obviously appreciated the value of these vessels, which could move freely in a calm and be relied upon to be at a pre-planned desination on time, whatever the weather. Consequently, during a period when most of the sailing fleet was in reserve, the paddle ships all remained in commission (barring those in for a refit).

For some reason, these vessels are not widely modelled, and indeed the

whole class has been rather ignored by the history books as a dead-end development and sidelined in favour of the big three deck liners. History seems to jump from HMS *Victory* to HMS *Warrior*, and then on to the introduction of the dreadnoughts in 1906. These paddle ships were very busy in their time, though, and in great demand, until the new-fangled screw propeller was steadily developed and the paddlers were simply phased out.

Again, working from the paddler's 25mm sailor figures, we get ship dimensions of 144ft by 29ft, these measurements being close to those of the early paddle warships *Hermes* and *Messenger* or *Blazer* and *Tartarus*.

Commonality of build

Both a gunboat and a paddle warship were on my list of tops for the GP hull. However, before setting to work, I wanted to explore the inkling of an idea I'd had. The gunboat top could perhaps be used and repurposed as

a paddle warship by fitting a paddle wheel unit, and the associated deck house would have gone on with the wheels on its sides. Early paddle vessels were small and not so different from the gunboats, so, by carefully choosing what went where on deck in regard to permanent fittings and standing rigging and being able to swap large cannon for smaller cannon (and crew) to alter the apparent scale, I reckoned I should be onto a winner.

To work

Both vessel types typically had three masts and high bulwarks. Provision had been made for a low deck position in the original hull build, and so a one-piece 4mm ply deck was cut and sanded to shape for a good fit on the lower interior supports.

Using my reference material, the approximate position for three masts to suit both types of ship were marked on deck, holes were drilled, and blocks set underneath these

positions – the drilled holes being at an angle to give the masts a jaunty rearward rake (see **Photo 1**). As the boat and thus masts are not that large and to save a lot of setting up at the pondside, I made the decision that the mast would be glued in position on the deck and therefore the standing rigging could also be attached permanently. Once the deck (mast in place) had been fitted, I spent some time playing with various sized crew members, cannon and cardboard paddle wheels to get a feel for where and how big the important items needed to be and then marked the deck with a pencil to suit.

Although the hull had been stripped of all the (loose) disco boat lead ballast weights, there is a thick, permanently fitted, strip of lead on the centreline underneath the hull for good stability, and so the weight of this had to be guesstimated and factored into consideration when creating a sailing style top, *i.e.*, simply a deck and mast (these would not be

particularly substantial). I therefore carried out a bath-test to establish where the waterline would be (60mm below bulwark top) and what bearing this would have on paddle size and immersion.

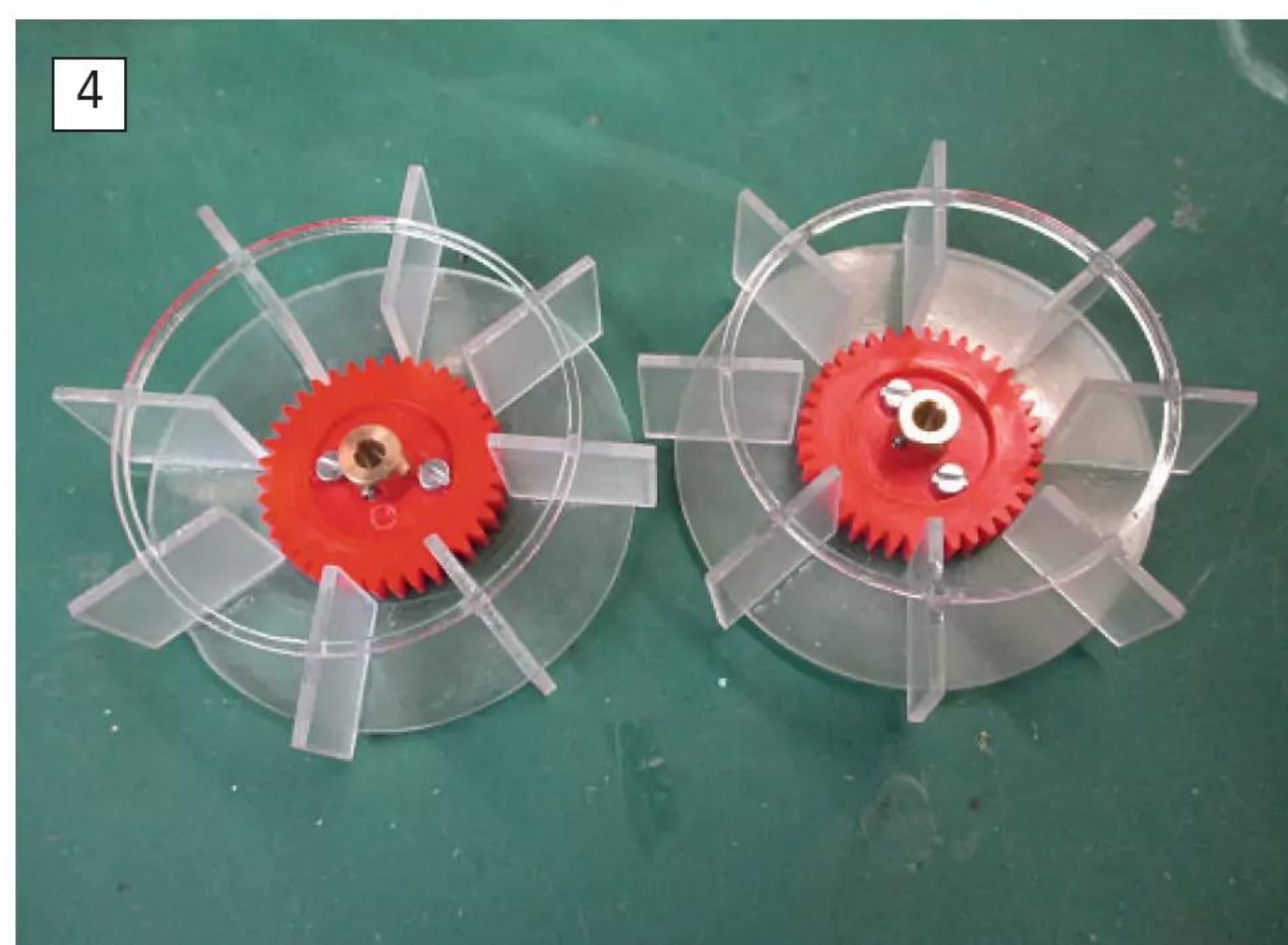
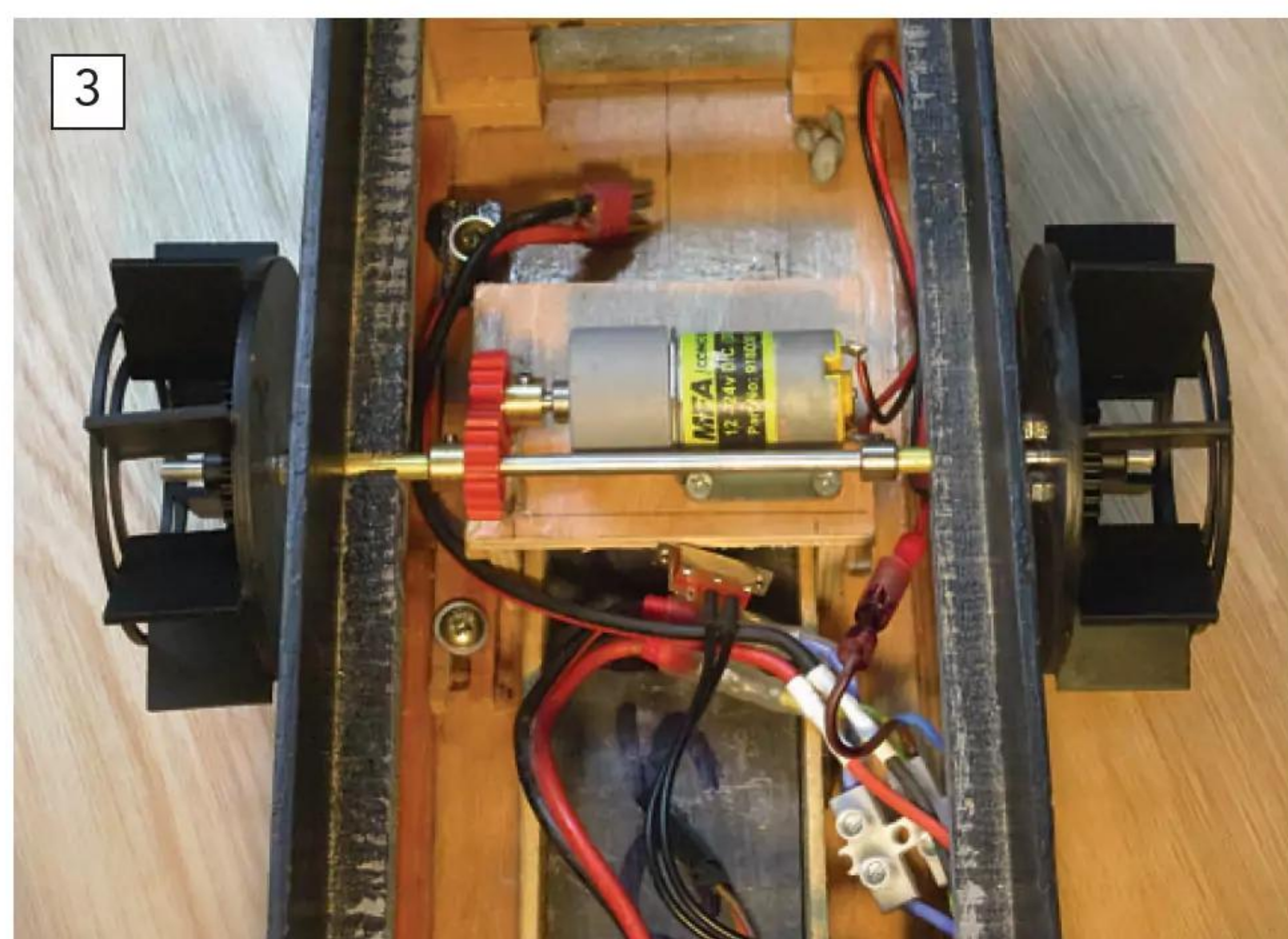
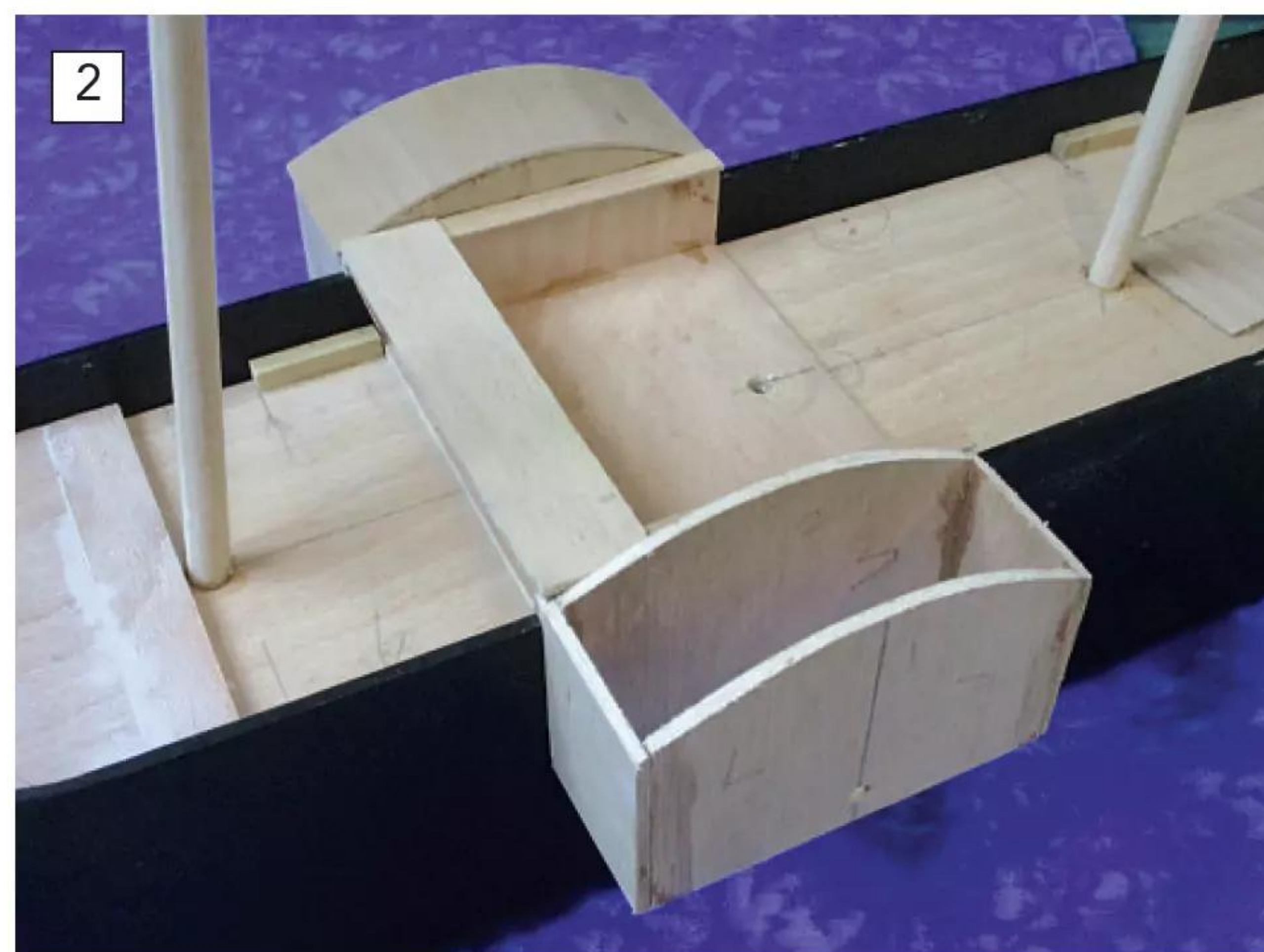
As the decks for either top would be the same, having essentially made the deck and set the mast in place, I then set to work on the paddle section. A paddle of about 80mm looked good, and so paddle boxes were designed to suit. These would be constructed in-one piece, with a short deck section, bridge and funnel, enabling the paddle bit to be removed as one entity (see **Photo 2**). Inside the boat, holes were drilled in the sides for paddle shafts, sleeved with thin-wall brass tube to suit the 4mm stainless steel paddle shaft, and a motor mount designed to carry a 30:1 geared MFA 12-24V 280 can motor unit, driving the shaft via two plastic gears, one on the gearbox and one on the shaft. The paddle mechanism (see **Photo 3**) really was as easy as that! The mount

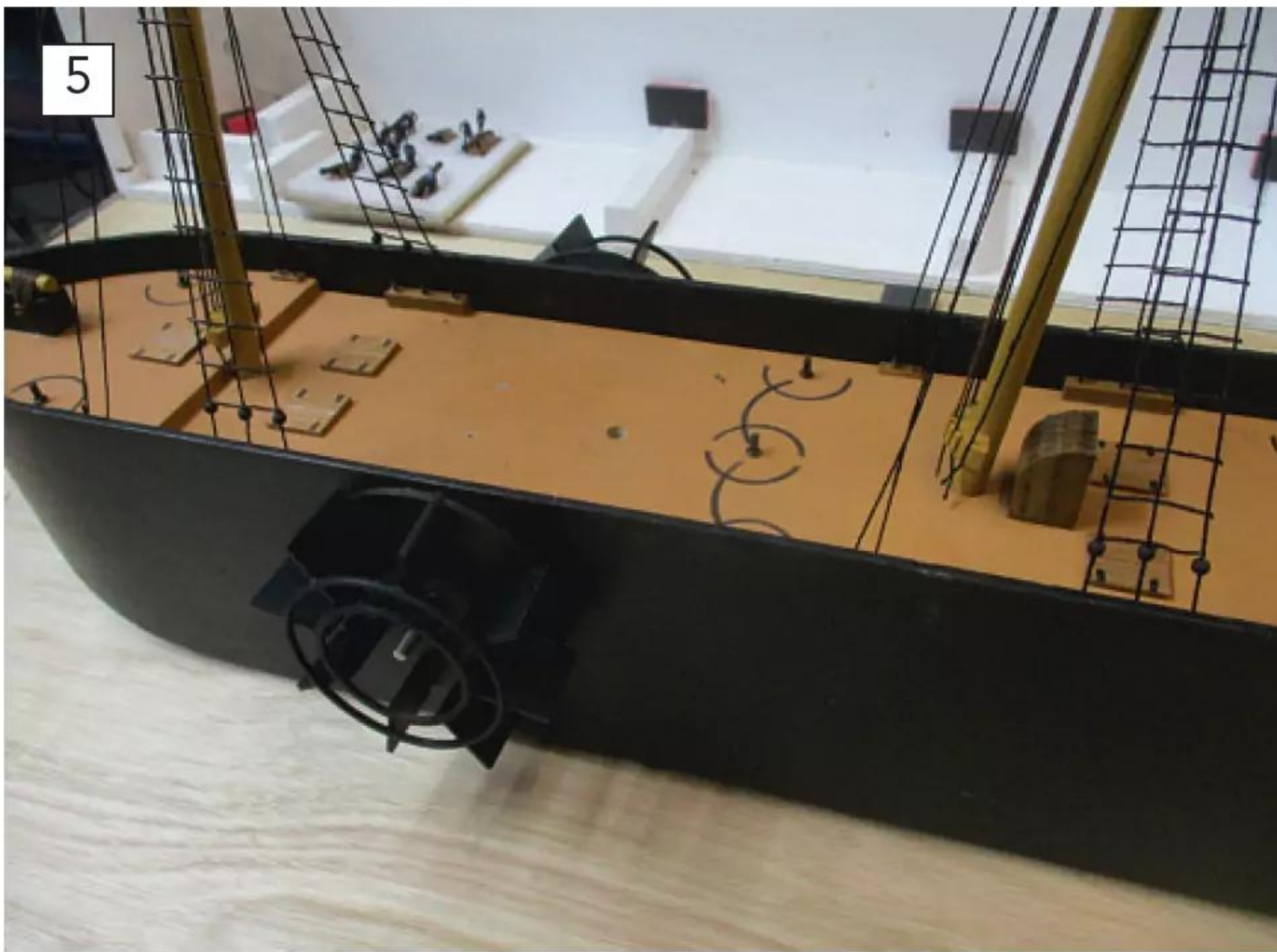
sits over the battery and is held in position with blocks fitted for the purpose. These holes in the side let in little if any water (although I have plugged them with Blu-tac, just in case) when the paddle shaft is missing and are invisible when the boat is sailing in its gunboat guise.

The paddles were built from Perspex sheet, in the same way as those for the disco boat were, using the 40mm diameter red-toothed gear wheels in the centre bolted to the rear disc to effectuate the driver (see **Photo 4**). However, unlike the disco boat, the paddles of which (being a feature) were left clear and outlined in red, the warship ones have been sprayed matt black (see **Photo 5**). The suggestion that there are paddles fitted is good enough, and the real things would have been black in any case.

Deck ephemera

This concerns hatches and other stuff and, remember, anything glued in place had to serve for both warship





types. Luckily, due to the small size of the gunboat, there really wasn't much on deck. A few hatches and that is about it! They were too small to require capstans for the anchor and didn't have a dedicated conning position. Bars to hold eyes for the standing rigging, crafted with gold-plated jewellery wire lengths with a preformed eye at one end, were the only other things needed. I then painted the deck a light brown, and the mast yellow ochre, both acrylic finishes. A few small hatches were made, and a larger main hatch in plastic was sourced for the gunboat. This hatch will be demountable as the paddle section has a different main engine hatch attached in the centre deck section which covers the mounting holes. The small hatches were glued onto the deck in positions that suited either style top. All this is representative only, as detail in either of the scales these vessels were being modelling to would be very small.

Armament

Both ship types were armed with anything from a 6pdr smooth-bore cannon up to perhaps a 7-inch MLR weapon (Muzzle Loading Rifled barrel), and there was no 'standard' outfit of weapons, the armament being swapped around during refits or as operations required.

The gunboat represents a smaller vessel than the paddler, and, as stated, only mounted two big guns, commonly a 68pdr and a 32pdr SBM (Smooth Bore Muzzle loading) gun, and possibly a field piece for something extra. In reality, the gunboats were usually armed by transferring guns from the larger ships as and when needed, and so the armament varied quite a bit. These guns were very heavy, about 6-tons or thereabouts for various

types of 8-inch bore 68pdr weapons and 3-tons for 6-inch bore 32pdr types, and immensely powerful. It has been calculated that the 68pdr had five times the hitting power of a 32pdr and both weapons fired their cannon balls at about Mach 1.5, well supersonic! When not in use, the guns were secured on the centreline to preserve stability, and this is how I have chosen to position them on deck. It would have been nice to have them in a firing position, but this would have required large gunports (flaps really, not square holes as per the Victory) and obviously I couldn't fit ports without compromising other tops. Various gun pivots to suit both ship styles were marked on deck and drilled before the deck was painted. In action all the guns pivoted around a post and iron circular tracks, known as gun-racers – these allowed the guns to be trained quickly and more accurately over a larger arc than might otherwise be the case. For these, several templates were made, and the tracks marked with a black permanent marker pen. This was a tricky job, requiring a steady hand and just one pass, as messing up would have necessitated repainting the deck to remove any erroneous markings. After this, the pivots were glued in place (pop rivet heads!). Despite only having two cannons, the gunboat deck had several alternative pivot points, and these alternative positions lend themselves nicely to the paddler model's armament, as the paddler would have had far more weapons on deck, albeit of a smaller calibre.

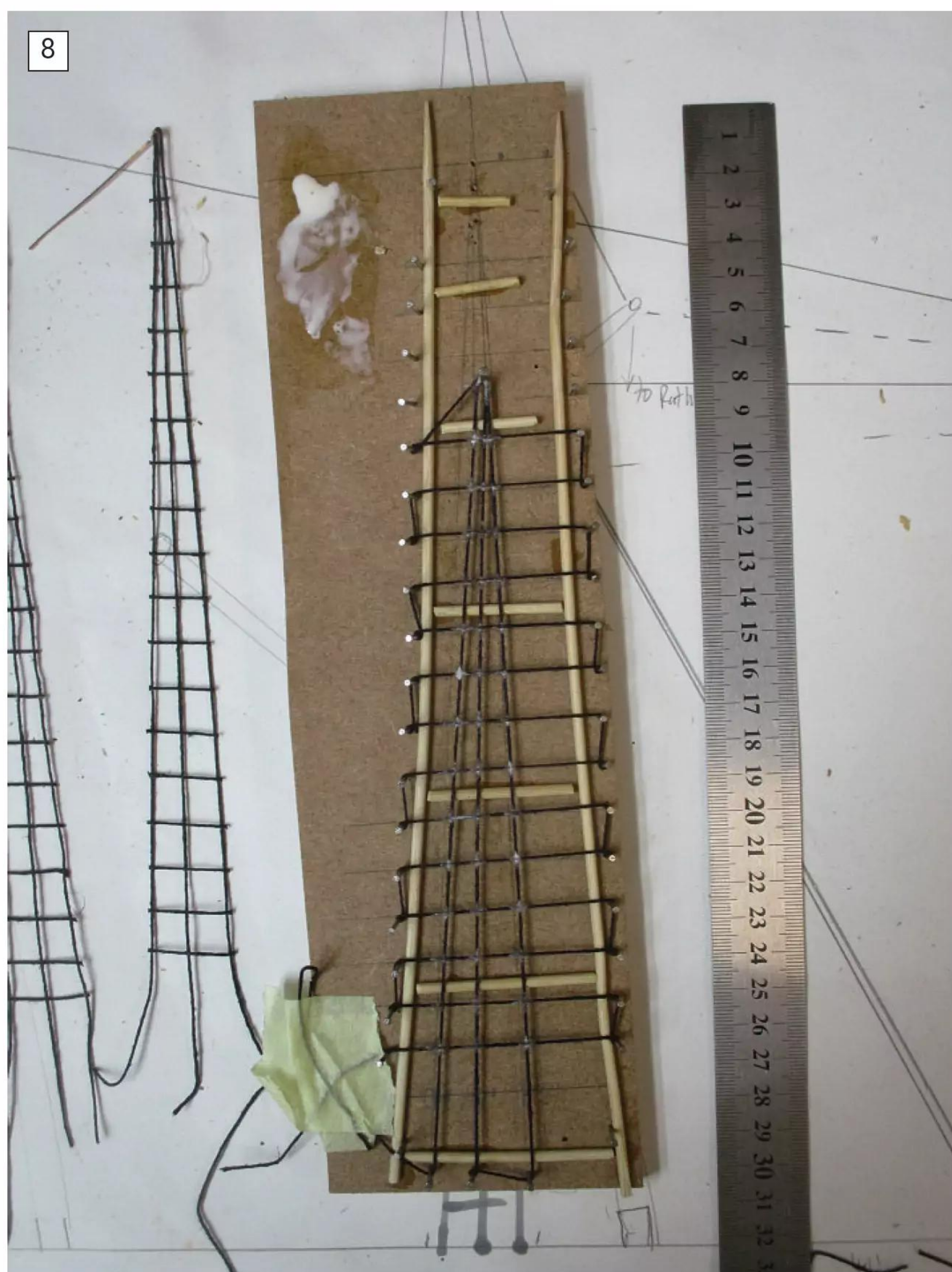
Some 40m barrel length cannon were purchased for the paddler, representing perhaps 18 or 24 pdr guns, and two plastic cannon I bought ages ago were modified slightly for the gunboat, while both types of

carriage had eyes added and were set in the front to sit over the pivot points.

The crew... Arrr, me hearties!

Standing different sized crewmen on deck instantly alters the perceived scale of the boat, and so the smaller gunboat has 38mm high figures on it while the somewhat larger paddler uses 25mm figures (see **Photo 6**). The main issue is that I cannot permanently position crew men on deck (gluing them to the deck would normally be the easy way to go about things) as I need to be able to swap the different sized figures around depending on the type of vessel I want to sail. So, considering that the guns are almost the only things on deck that will be swapped about, it made sense to attach the figures to the cannon, naturally in a creative way so as not to look too obvious (see **Photo 7**). In addition, for gunboat use, circles of thin plastic painted in the deck's pale brown were cut to fit inside the gun races and these have men stuck on them. The figure positioned at the stern holds the tiller bar (no wheel on the smaller gunboats), while in the centre, the ventilator box also has figures





attached. Outfitting the paddler centre section was easy, as the figures could be permanently stuck in place, and the cannon were similarly furnished with the smaller matelots. The crew in both sizes came courtesy of cheap plastic railways figures, oddly enough chosen not just for thrift but because they're in nondescript poses and once painted up really look the part as c.1860s' sailors. Action figures would perhaps have been nice, but they'd actually have been more limiting than standing/walking types, especially as I cannot have the guns in their firing positions.

Two into one

In order to convert the gunboat deck into a paddle warship I only have to remove the cannon and other men, funnel and deckhouse, and then fit the paddle specific items.

Firstly, the motor/gear unit is fitted and connected to the motor leads already inside the hull. A shaft is inserted with one gear and a stop collar, then the paddle fitted on the ends of the shaft before tightening the retaining grub screws. Once this is in situ the main deck can be replaced, the paddle box deck unit lowered into place and the funnel plugged in. Small cut-outs on the inner wheel box faces allow the unit to be placed over the shaft, and finally the men on their cannons placed on deck. Cunningly, the deck section is held in place at one end by the standing rigging deck bars, and the plug-in funnel holds it at the other end. The same funnel does duty for the gunboat.

Rigging

I fabricated a temporary jig using a bit of MDF and used panel pins for the side stays and ratlines (shown in **Photo 8** before the PVA glue had dried). I've seen several articles in the past detailing how to create a multi-purpose jig, but if you're only making one ship's set (and in this case there were only three vertical stays either side per mast) then bashing nails into a bit of wood is usually adequate enough for a one-off task. I used a card template to size the stays for the three masts and parallel lines wire transferred to the MDF to position the nails. Bamboo skewers were glued in place to raise the linen thread off the board and then said linen was wrapped around the nails, fixed at their junctions with PVA glue, and only cut away once this glue (which dries clear) has done its job.



Spacing for the ratlines is representative only as, of course, the same lines have to do for both scales of figure. As the stays are inboard of the bulwarks, and not outside in plain sight, I used 4mm plastic beads to simulate the blocks that should be placed to tension the stays. The thread I used was black, as are the beads, and the bulwark is also black, so visually everything blends well.

I can't claim the rigging is technically correct. There is, however, a fair amount of it, which is what matters (the rigging on my HMS London was a bit sparse, as the masts needed to be demountable) and I did consult period illustrations in my reference book to get 'the look'. A drop of superglue secured all the wraps on the masts and spars, and once complete all the wraps were painted with Eze-Kote acrylic.

An omission to the rigging is the lack of cross-yards to support square sails on the foremast, a conscious decision on my part in order to reduce the width of the storage box (see **Photo 9**). It would be possible to have some detachable yards with elastic rigging, but...

Commissioning voyage

This was a bit of an anti-climax really, as the hull had already been outfitted mechanically and, of course, used with the disco top. An early test with just the deck and bare masts fitted had proved satisfactory, so the maiden

voyage of the now completed boat went just as I had expected.

There is no great weight above deck, even with the paddle centre bit fitted, the below-hull centre lead strip does its job, and the boat is really stable (admittedly, after a couple of lead weights were added to achieve a lower waterline). Wind resistance of the sail-less masting is minimal and the boat heels only slightly, even in a stiff breeze.

Manoeuvrability is very good due to the large rudder, and the small 385 brushed motor and 25mm prop is adequate for pottering around, as neither type of vessel was very fast (8-10 knots give or take).

The paddle section uses exactly the same motor/gear combination for the paddles as the initial disco boat setup.

The paddles rotate at a convincing speed when cruising along, although the boat is much too heavy for them to be used to propel the vessel on their own. On the water, the paddle covers were initially permanently touching the water, and removing ballast gave too high a waterline, so about 6mm was cut off the bottoms of the covers. This has worked out well, although the boxes do fill with water when the paddles turn, and the perceived water clearance is diminished, but I can't trim the paddle boxes anymore. Both the main 385 and 280 geared motors are supplied from the single 15A ESC, and having a very small prop on this relatively heavy boat means even the low cruising speed is at half throttle, which is beneficial to keeping the paddle speed up.

Changing from one top style to the other is very easy, and both sets of empennages are contained within the (unfortunately large) storage/transport mast/deck box (see **Photo 9, again**). If the hull looks a bit drab, with some scuffing evidence, well, these boats had a hard life and so I have left the finish *au naturel*, and it



just gets a wash now and then. When the time comes, another coat of black paint will take but a minute to do.

Something a bit different

I am quite pleased with these tops. There's a lot going on, what with the sailors, cannon, rigging, and so on, and despite the differing scales there are no obvious compromises to be seen. Perhaps the most glaring should be the ratline spacings, but no one seems to notice. I think they both work very nicely as representations of these lesser-known warship types.

Another top idea...

The next top for the GP hull we'll be looking at, in the November 2024 issue of Model Boats, will perhaps be of far broader appeal, and, as well as being easy and economic to build will offer you masses of scope in terms of customising/personalising. ●



Will it fit in your dry dock?

Length of the basic hull	600mm x 125mm
Length over the bowsprit and rear yard	830mm
Mast height above deck	450mm
Width over paddle sponsons	205mm
Paddle diameter	85mm
Paddle width	30mm

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Melite

Glynn Guest explains how to build your very own Maltese fishing boat model from this month's free plan



During a holiday on the island of Malta some years ago, we walked along a harbour front where a few fishing boats were moored. As I am always on the lookout for interesting subjects to model, I naturally took some photographs. Having returned home, however, these photos were simply tucked away in the holiday files and quickly forgotten about – until recently when, casting around for a new project idea, a model of a small fishing boat suddenly became very appealing.

After relocating these photos, my first thought was to build the hull along the lines of my 'Ute' model (see the February 2013 issue of *Model Boats*). However, these Maltese fishing boats had a pronounced flare in their hull sides, increasing towards the bows, which the Ute's method of construction would not readily match. This resulted in a period of sketching out lots of ideas until something that looked promising appeared. What I came up with wasn't a precisely scaled down version of one of these Maltese fishing vessels, more another example of wooden origami. Being no stranger to designing plans though, I was confident I had the basis a model that would be relatively easy to build and yet still look pleasingly realistic out on the water.

Plans diverted

My original intention had been to build a 30-inch (76 cm) model using mainly Liteply. For propulsion, direct drive using a low power 540 type of motor seemed about right. Looking around my workshop (my wife has another less complimentary name for it), a pile of balsa offcuts and scrap pieces could be seen. These weren't large enough for the size of model I had in mind but, it occurred to me, they would perhaps suffice for a half size one.

It was back, then, to the drawing board, where I came to the conclusion that a 15-inch (38 cm) long hull could work. The motor would have to be changed to a RE 360, but experience has taught me these motors can give good performance in a hull of this size when using AA rechargeable cells. As a result, there had to be a little tweaking of my original design, but no great alterations were needed.

Nevertheless, you may prefer the idea of the larger model. If so, these plans could be taken along to a copy shop and enlarged. Alternatively, as most of the parts have straight edges,

it shouldn't be too difficult to redraw them at twice plan size. Appropriate substitutions for some of the materials used would, of course, also be required.

Materials

The prototype model was built using the pieces of balsa wood I had to hand. Its construction is, however, flexible enough to allow the use of different thicknesses of wood, and some parts are marked as such on the plans.

I covered each side of the hull frame with a single oversize sheet of 1/16-inch (1.5 mm) balsa. The use of such thin balsa might make some people hesitate but provided soft and weak grades are avoided and the wood is properly treated then it is more than adequate for all but the most insensitive handling. I have used card of the same thickness to cover the hull sides of similar models, but balsa is more resilient if it gets wet; card can become a weak soggy mess without through waterproofing and meticulous maintenance.

For less demanding applications I did use card, i.e., for items such as the coaming around the deck opening and the detachable hatch that fits over it. Card was also used for the rubbing strips along the hull sides. It is such a useful material that I regularly save potentially serviceable pieces from packaging and such like for modelling purposes. The bows were reinforced with a strip of harder wood; again, being economical, this was formed from wooden coffee stirrers, always very useful additions to the spares box.

All the wood joints were sealed with a wood glue suitable for outdoor use. This has always given me strong joints, which, with adequately sealed outer hull surfaces and sensible maintenance, have yet to let me down. The product's absence of odour together with the ability to wipe any spills away with a damp cloth also help maintain domestic peace. Epoxy adhesive was used for the metal/wood joints, as its slow setting nature not only makes it easier to work but also allows the glue more time to slowly and thoroughly penetrate the pores of the wood.

Power and control

Small models like this don't need excessive power; the idea seem tempting but wouldn't result in a boat that's relaxing to sail. Overpowering could, admittedly, be amusing for

“Motors such as the RE360 and RE 385 are more than adequate”

spectators, who may get a few laughs out of seeing the boat hop around on the water until it self-destructs – hopefully without taking another model with it! Motors such as the RE 360 or RE 385 are more than adequate. Be warned, these motors look very similar to the much more powerful, and totally unsuitable, 380/400 types.

Likewise, small models, and to be fair some larger ones, can be successfully driven by economical propellers and shaft assemblies like those in the RadioActive brand range. Here, I only needed a 6-inch (150 mm) long tube, but it was no trouble to cut down a longer tube and shaft from this series.

The energy source is equally undemanding and a four-cell pack of rechargeable AA size Nimh cells will be enough. Provided they have a capacity of at least 1000 mAh, you can expect a sailing run of an hour

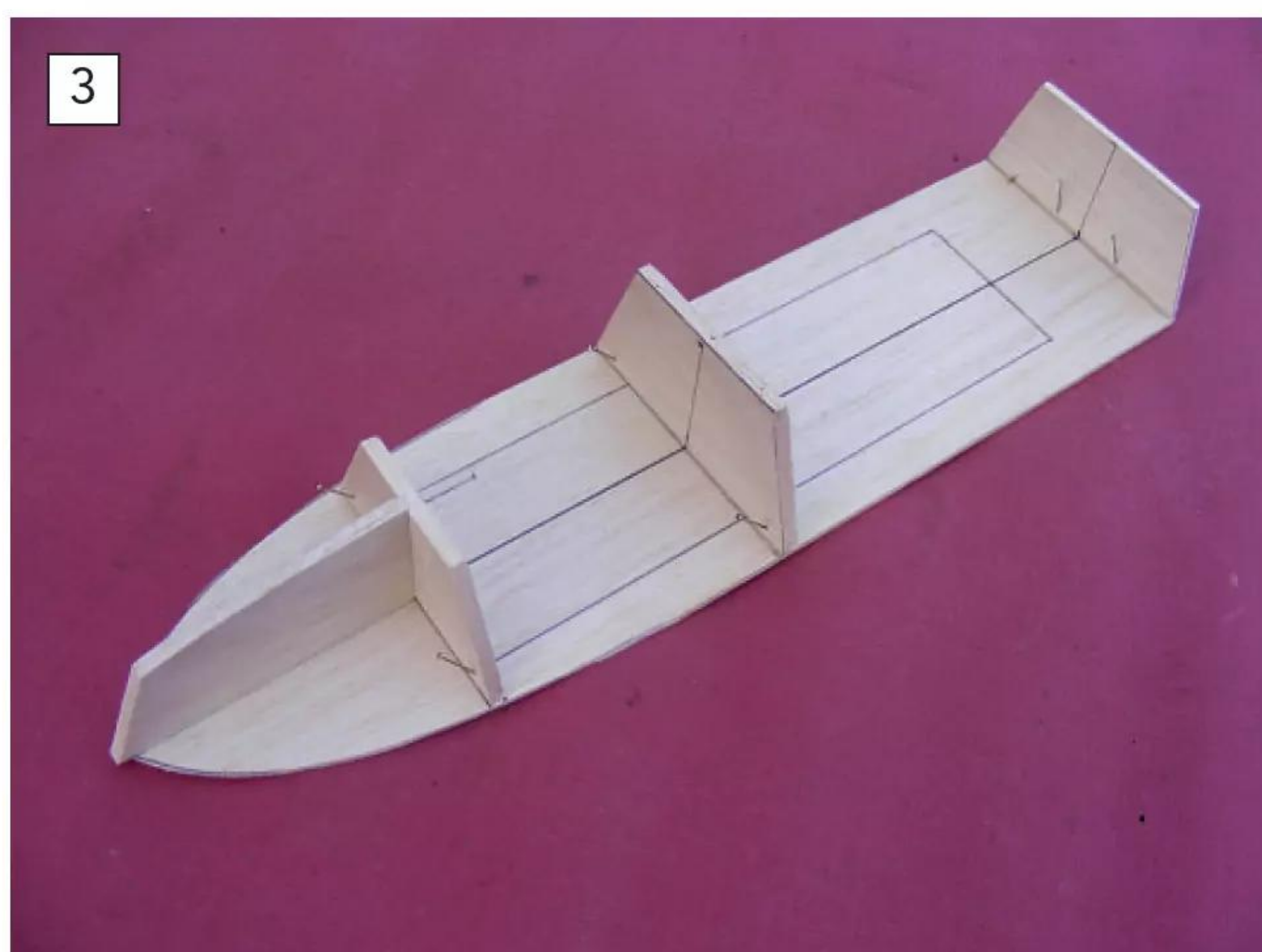
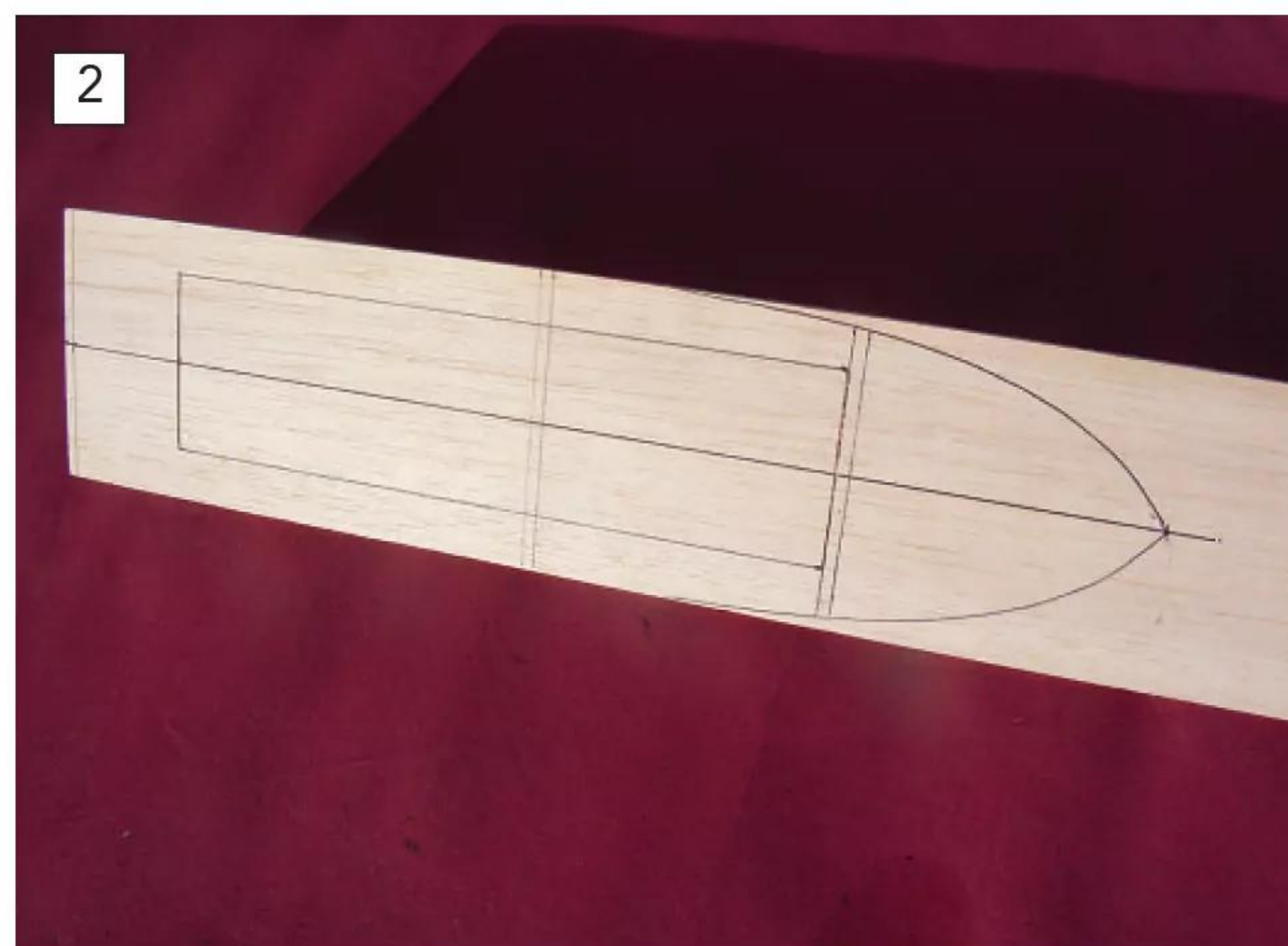
or more. The ESC (Electronic Speed Controller) can be equally modest in size and, rather than risk some of the temptingly cheap offerings from distant lands via the Internet, I used an Mtroniks microViper; with a 10-amps rating, BEC (Battery Eliminator Circuit) and a postage stamp footprint, these have proven convenient, easy and reliable in my models. When first used they were rated down to 4.8-volts, but are now advertised as 6-volts, yet they seem to operate OK on the lower voltage of a 4-cell battery pack.

As for the R/C outfit, *Melite* is ideal for that spare one that you have lying idle on a shelf somewhere – even an old 27-40 MHz R/C outfit would do, although care would need to be taken when installing the long receiver aerial in such a small model. This would, however, add the onerous task of checking that no one else is operating on the same frequency before switching on, unless of course you’re one of the “Everyone is on 2.4 GHz now” believers...

This model could accommodate a standard size rudder servo, but a smaller one was installed in the prototype. With sensible installation, a small rudder will not only be powerful enough but will save some internal space.

Building time

The first task is to cut out the deck and bottom pieces. I made a half-template from some scrap card to ensure that the curved edges in the bows were symmetrical (see **Photo 1**). It then seemed a good idea to draw the positions of the stempiece, bulkhead 2 and the deck access opening on the underside of the deck (see **Photo 2**). This allows a trial fitting of these parts; meaning any adjustments can be made before reaching for the glue (see **Photo 3**). One thing realised at this point was how difficult it would be to make the hole for the prop-tube in bulkhead 2 after building the hull. The required slot is now drawn on the plans (see **Photo 4**).





“With sensible installation, a small rudder will not only be powerful enough but will save some internal space”

Before gluing these items to the underside of the deck, transverse cuts for the removable section of the deck access opening, but not the longitudinal cuts, were made. This retains useful strength in the deck piece while building the hull (your longitudinal cuts can be made later). It also means **no** glue has to be placed between the top of bulkhead 2 and the underside of this removable piece. Working inverted on a flat surface, the structure will need to be held down with suitable weights (I find old lead acid batteries are ideal); this ensures that the deck remains flat while the hull bottom piece is glued and pinned in place (see **Photo 5**).

The glue must fully set before the next stage; manufacturers may claim their products to be strong enough to handle after a short time but leaving overnight is always my preference.

The next task is to sand the edges of the hull structure to prepare the surfaces against which the hull sides can be firmly glued. The only safe way to sand these edges is with a sanding block; the ones I use are no more than scrap pieces of flat and smooth timber to which sandpaper is affixed (see **Photo 6**).

Internal fixings

At this stage, I took advantage of the hull sides still being absent to install the motor and rudder/propeller tubes into my hull. Your rudder assembly could be a commercial item, although this would likely need modifying to fit into this model. The one I used in prototype was made simply by raiding the scrap box for a steel shaft, brass tube, metal blade and homemade tiller arm.

A slot had to be cut along the centerline of the hull bottom just aft of bulkhead 2. This was adjusted so

that the propeller (a 40 mm diameter three-bladed one) was correctly positioned to clear the hull bottom and rudder, while its upper end allowed the propeller and motor shafts to be aligned. Once happy, my propeller and rudder tubes were epoxied into the hull (see **Photo 7**).

Motors sometimes have metal or plastic mounts that are intended to be secured into the model with screws. This isn't always possible due to limited space, and maybe the screws would penetrate through the hull. In my model, the motor was fitted into a recess in a block of balsa. This recess was made with sandpaper wrapped around a length of dowel, which had the same diameter as the motor case. It took a little trial and error before the two shafts were aligned and the block could be glued into the hull. My motor was secured into this block with some Silicone sealant left over from a domestic job. Provided the motor case is clean and grease free, these sealants will hold properly installed motors very securely. If you're going to be using this method, then do

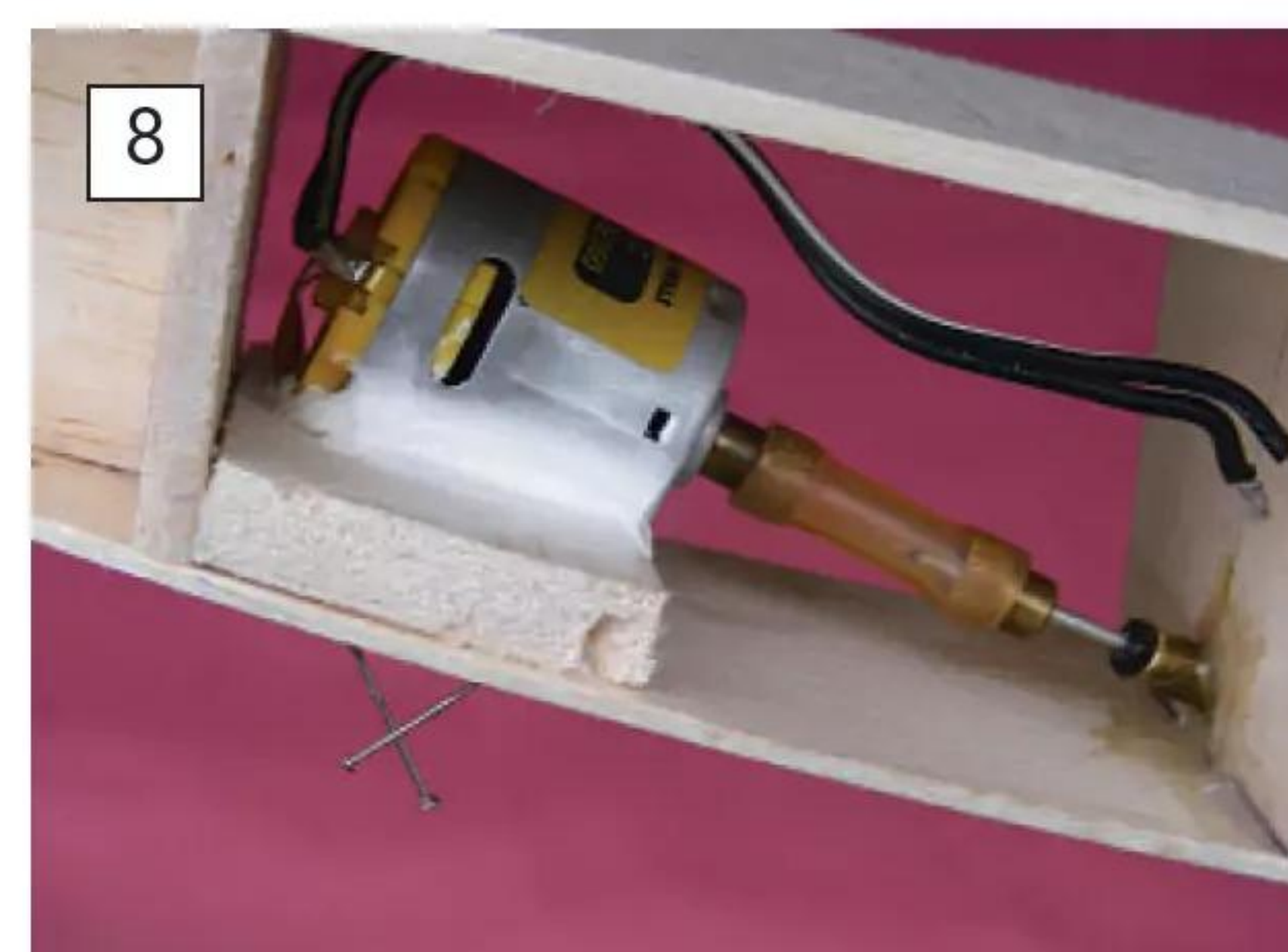
ensure that the motor has suitable leads firmly secured to its electrical terminals before sticking it in place!

One challenge with the RadioActive propeller shafts is their small diameters, which are perfectly adequate for the power they can realistically be asked to transmit from motor to propeller. The problem can be making a secure and reliable connection between motor and propeller shafts. Sometimes you can find rubber tubing that has a sufficiently small bore to grip the prop shaft and withstand a 'stall test'; this is where the propeller is prevented from turning while the power applied to the motor is increased. Even if it doesn't slip, a more secure method feels better.

For this model, I found two small brass bushes (actually the centers from some old gear wheels) would fit onto the two shafts and could be secured with grub screws. I slid some silicone tubing over these bushes to make a very robust coupling, which still had enough flexibility to accommodate any slight misalignment (see **Photo 8**).

The other end of the shaft can also be troublesome. The plastic propeller has a brass insert in the boss, which

“If you're going to be using this method, then do ensure that the motor has suitable leads firmly secured to its electrical terminals before sticking it in place!”



screws onto the M2 threaded shaft. Just relying on tightly screwing the propeller in place is not really reliable. There is one propeller at the bottom of my garden pond which, when testing another model, managed to unscrew itself. If you can find an M2 nut it could be used as a locking or jam nut to secure the propeller. Alternatively, a thread locking compound, or even a spot of epoxy, could be used here.

Hull sides

This was the part of the model's construction I'd been feeling most apprehensive about. I found the increasing flare as you moved forward would create quite a twist in the side sheeting, certainly to a more noticeable degree than I'd experienced in my usual sheet balsa hulls.

A sheet of 1/16-inch (1.5 mm) balsa, which was large enough to cover one side, allowing for the bulwarks around the edges of the deck, was used. It was stuck to the edges of the transom, bulkhead 2 and the deck/

bottom between them. This involved only a modest twist, and pins were more than adequate to hold it in place (see **Photo 9**).

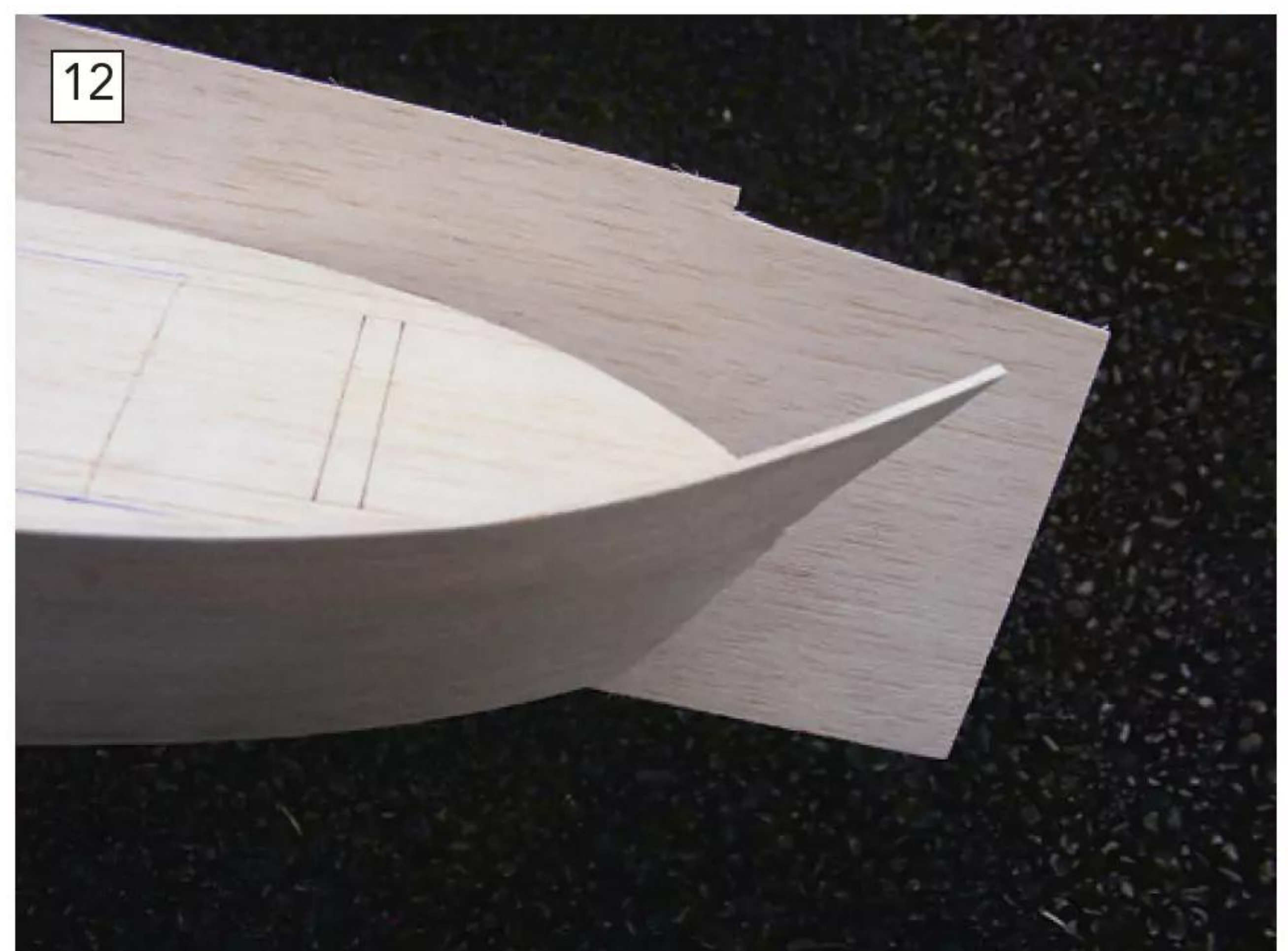
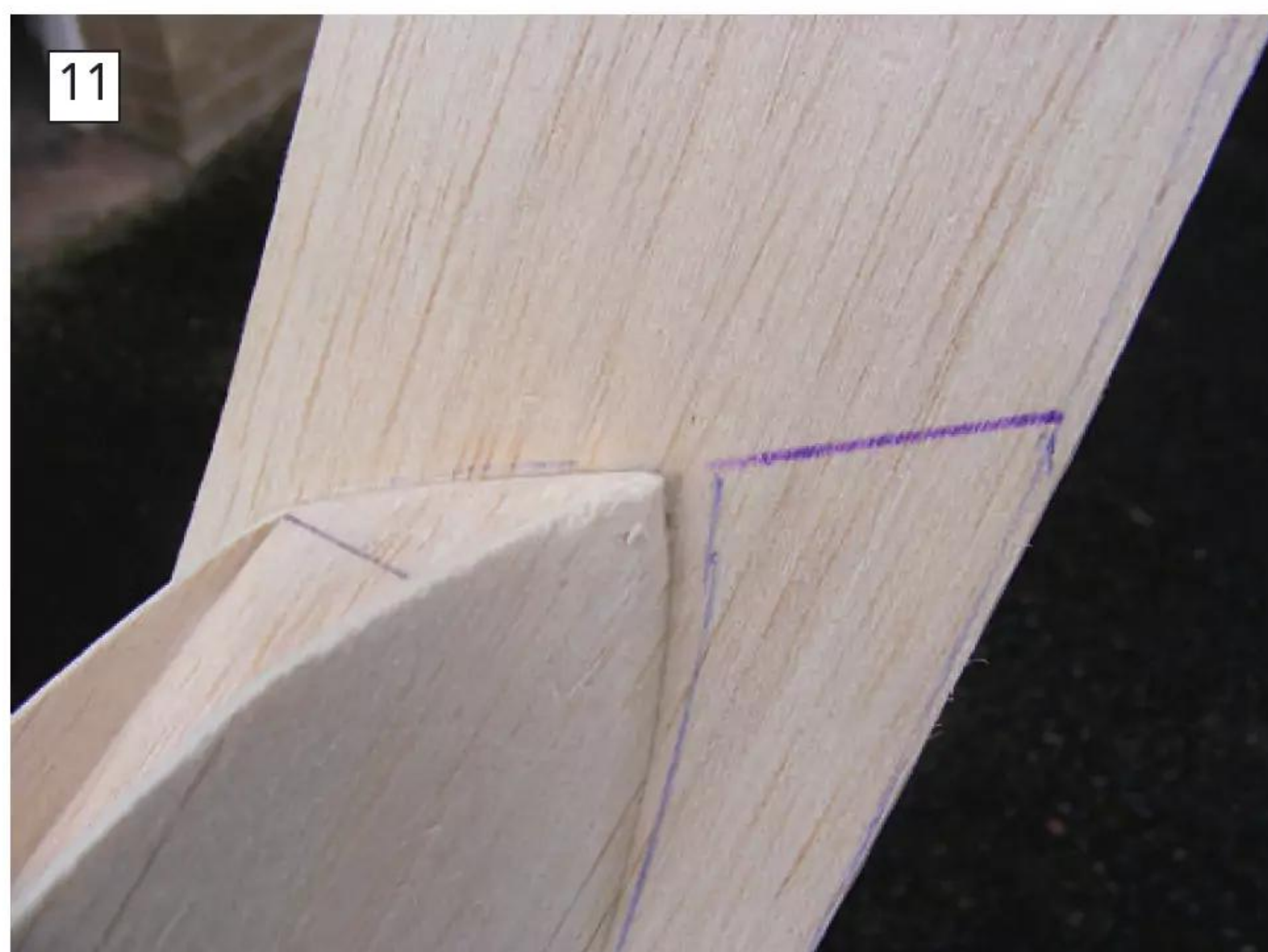
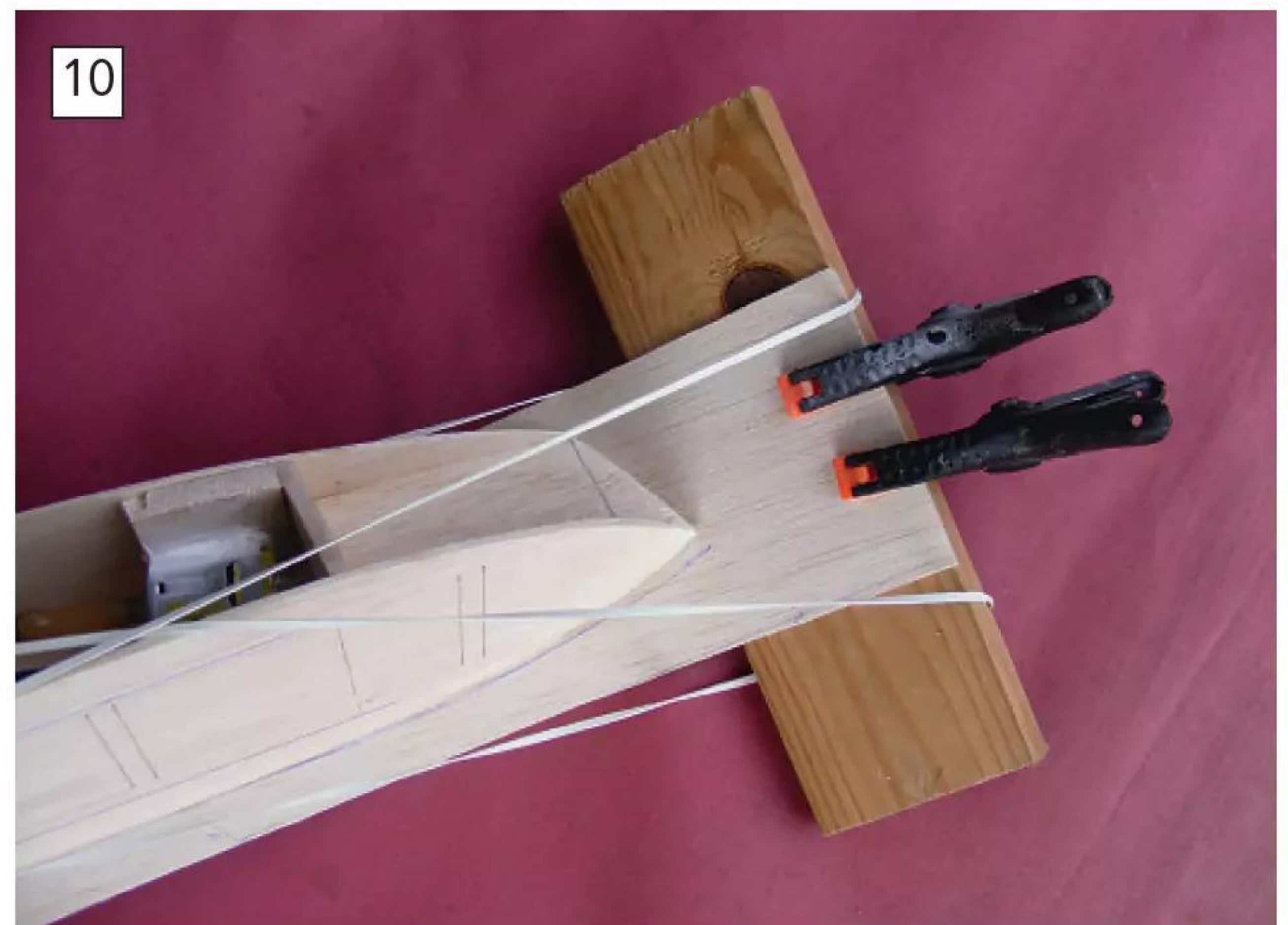
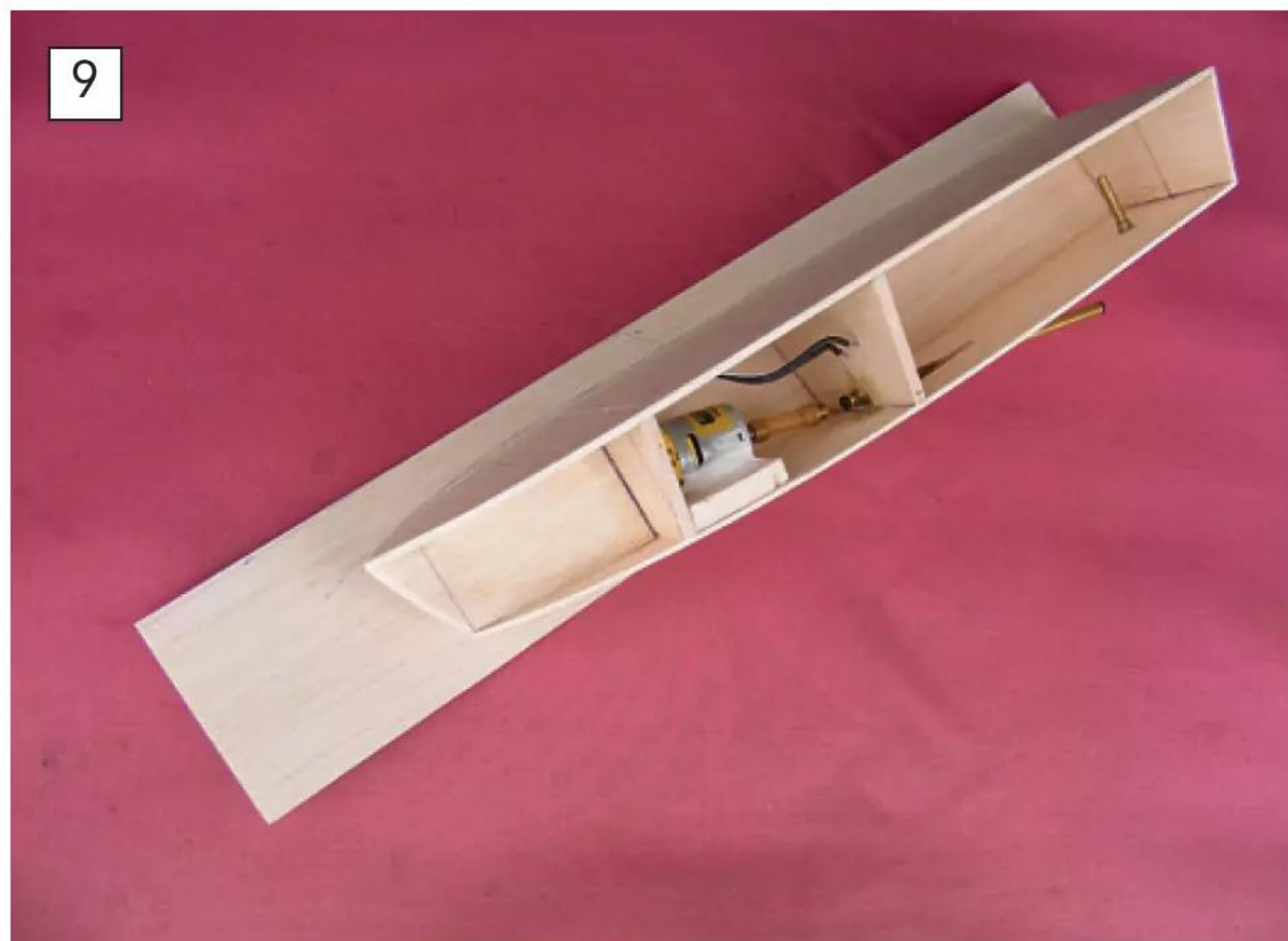
Only when convinced the glued joints were fully set was the next stage attempted. It was obvious that pins alone would not provide the even pressure required to keep the side sheet firmly pressed against the stempiece and edges of the deck and hull bottom. After a couple of false starts, the idea of using a scrap length of timber along with clamps and a few elastic bands was found to work (see **Photo 10**). Rather than immediately reach for the glue, the outer surfaces of the side sheet from bulkhead 2 to the stempiece were dampened with water and left in this bent and twisted shape overnight.

The following morning, after removing the elastic bands and

clamps, the side sheet had developed more or less the desired shape. It wasn't flush against the hull structure but close enough that pins could now hold the glued joints together. Again, only when the joints had fully set was the excess sheet trimmed away from the bows to a line drawn to match the stempiece (see **Photo 11**). This process was repeated on the other side of the hull. When reaching the bows, the second sheet could be glued up against the first one (see **Photo 12**).

If this method of covering the hull sides seems troublesome, then you could try an alternative that I've used successfully many times. The method involves using small pieces of sheet, with the wood grain running vertically (from hull bottom to deck). Working forwards from the stern, you'll need to ensure each sheet makes a glued

"If this method of covering the hull sides seems troublesome, then you could try an alternative that I've used successfully many times..."





butt joint with the preceding sheet. You'll find the vertical wood grain usually makes it easier to adapt to any twists and bends required.

From the bottom to the bows

Following this, I simply trimmed the excess balsa sheet away from the hull bottom. The top edge needed more care as it was going to create the bulwark that ran from the bows to the stern. The original vessel that inspired this model had a taller bulwark in the bows, then a step that dropped to a lower height in the aft section. I will admit it took a fair amount of care and attention to cut away along the right lines. If you find the idea of this a little daunting, you may prefer to opt for the simpler task of a straight edged bulwark.

At this point it seemed like a good time to cut the access opening away from the deck, as the hull was now rigid and strong enough to allay any concerns about accidental damage. The two longitudinal cuts released this piece easily, since I'd been very careful not to

get any glue between it and bulkhead 2 (see **Photo 13**). The stern I finished by gluing a balsa strip across the deck between the bulwarks (see **Photo 14**).

This left only the bows to complete. While I was confident the basic bow structure was suitably robust thanks to the support of the internal stempiece, I suspected the balsa here could be susceptible to minor impact damage. So, after first sanding a flat on the stem and then gluing two laminations of wooden coffee stirrers in place (see **Photo 15**), I added some local reinforcement. I followed this up by carefully sanding it to blend into the hull shape. A confession now: a tube of ready mixed domestic filler also had to be used to hide a few less than perfect regions (see **Photo 16**).

Surface sealing

Everyone will have their own ideas of how to prepare a bare wood surface before any painting can begin (although, let's be honest, we've all seen models where the paint finish looks suspiciously like it's been slapped straight onto bare wood!).

However, with this model being based on vessels that appear to have hulls made from GRP, wood grain visible through the final paint finish isn't an effect to be aiming for.

Before going any further, though, I suggest checking your hull's external surfaces for any defects and using glue and domestic filler if necessary to correct them. I also took the opportunity to slightly round the lower corners of my hull, between sides and bottom sheets, although not so much as to weaken this junction (see cross-section on plans); rounded corners allowing for better paint adhesion than sharp corners.

My usual lightweight fibre-reinforced balsa sealing method was employed next. This involves using cellulose dope and model aircraft tissue. These products are not readily available from the typical high street stores, but they are on the Internet. The degree of extra toughening possible is modest but worthwhile and, while it might not make a model indestructible, this can limit and localise damage so that a balsa model



can be repaired rather than having to be scrapped after an accident.

My balsa is usually given two or three coats of thinned dope (a 50:50 mix of neat dope and cellulose thinners). This readily penetrates the porous balsa, toughening it and making a bond with subsequent coats. It also locks the loose fibers on the surface and allows them to be sanded off between coats. After this, the hull is covered with tissue, using neat dope as the adhesive. The flat surfaces of hulls such as this one make the process an easy task.

Starting at the transom, a slightly oversize piece of tissue was cut out and laid in place (see **Photo 17**). Brushing neat dope onto and through the tissue, starting at the center of the panel and working outwards, fixed it in place. Once dry, the surplus around the edges could be trimmed away. The hull bottom was covered in the same way but leaving a slot for the propeller tube and a hole for the rudder tube accessible.

Panels of tissue were used to cover the hull sides, too (see **Photo 18**).

The excess tissue above the bulwarks and at the bows was then trimmed off, but not along the edges of the transom and bottom. The corners of a hull often seem to be regions that get more knocks and scrapes, so a little extra reinforcement can be welcome. This can be created by 'feathering' the excess tissue with regular slits (see **Photo 19**), which allows the tissue to be easily wrapped around these edges with a dope-loaded brush, with little risk of creases forming. After two or three more coats of neat dope, with a light sanding by fine paper between coats, this ought to give a smooth finish to the external balsa surfaces.

First floating trials

At this stage my hull underwent a quick floatation test that involved ballasting, stability checks and running the R/C gear on our garden pond. I highly recommend doing this sooner rather than later, rather than running the risk of having to dismantle a completed model to solve problems that could have been corrected earlier.

After mounting the servo onto two balsa blocks, which had been glued to the hull sides, a simple wire link was made between servo and tiller arms. The battery pack, ESC and receiver were then fitted into the hull behind bulkhead 2. Pieces of foam plastic were used to stop these items moving and upsetting the model's trim.

Some lead sheets had to be placed on the hull bottom to float it at its desired waterline, after which my hull behaved perfectly. This lead was not glued in place at this time, as the removable hatch and details that were yet to be added would change the model's final trim.

17

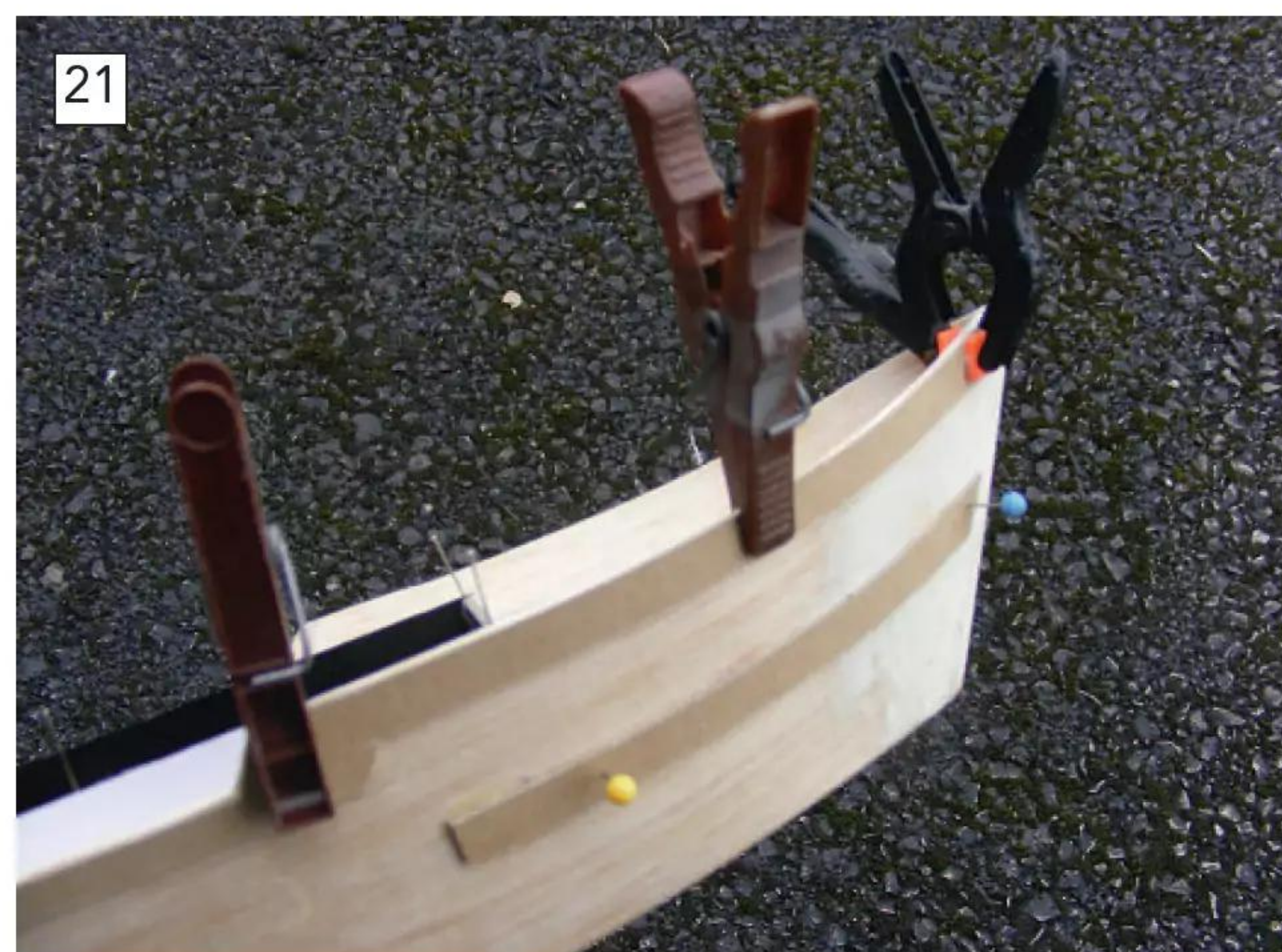


18



19





The results were highly encouraging and, being a small model, *Melite* was soon sailing around the pond in a nippy fashion. The driveline and R/C installation were given a thorough workout and revealed no problems. Steering was good and the model even looked to be controllable when moving astern. Sometimes enthusiasm can flag halfway through a build, so a sailing test like this can encourage perseverance.

Finishing off

The removable hatch was to fit over a deck coaming, and this was made from some thick card stuck around the inside of the edges of the access opening (see **Photo 20**). Thinner card made the rubbing strips that could be seen around the outside of these boats (see **Photo 21**).

The deck, insides of the bulwarks and card surfaces were then sealed

with a couple of coats of dope.

The hatch was made using the piece cut from the deck for access (so, a perfect match for the opening) and card strips were glued around the edges. To ensure this was as a good fit over the deck coaming strips, my hatch was built over them, using suitable weight to keep it flat (see **Photo 22**). The only thing to be careful with is that no glue gets between hatch and coaming!



The wheelhouse was roughly copied from my reference photographs, using some balsa and card (see **Photos 23 and 24**). Here you can 'do your own thing', as the real boats vary considerably in appearance. Again, I used dope to seal the external hatch surfaces. Dope was also applied to the inner surfaces of the card that fitted over the deck coaming. Any water that lands on the deck while sailing could be sucked into the gap between coaming and hatch, so some waterproofing here is sensible.

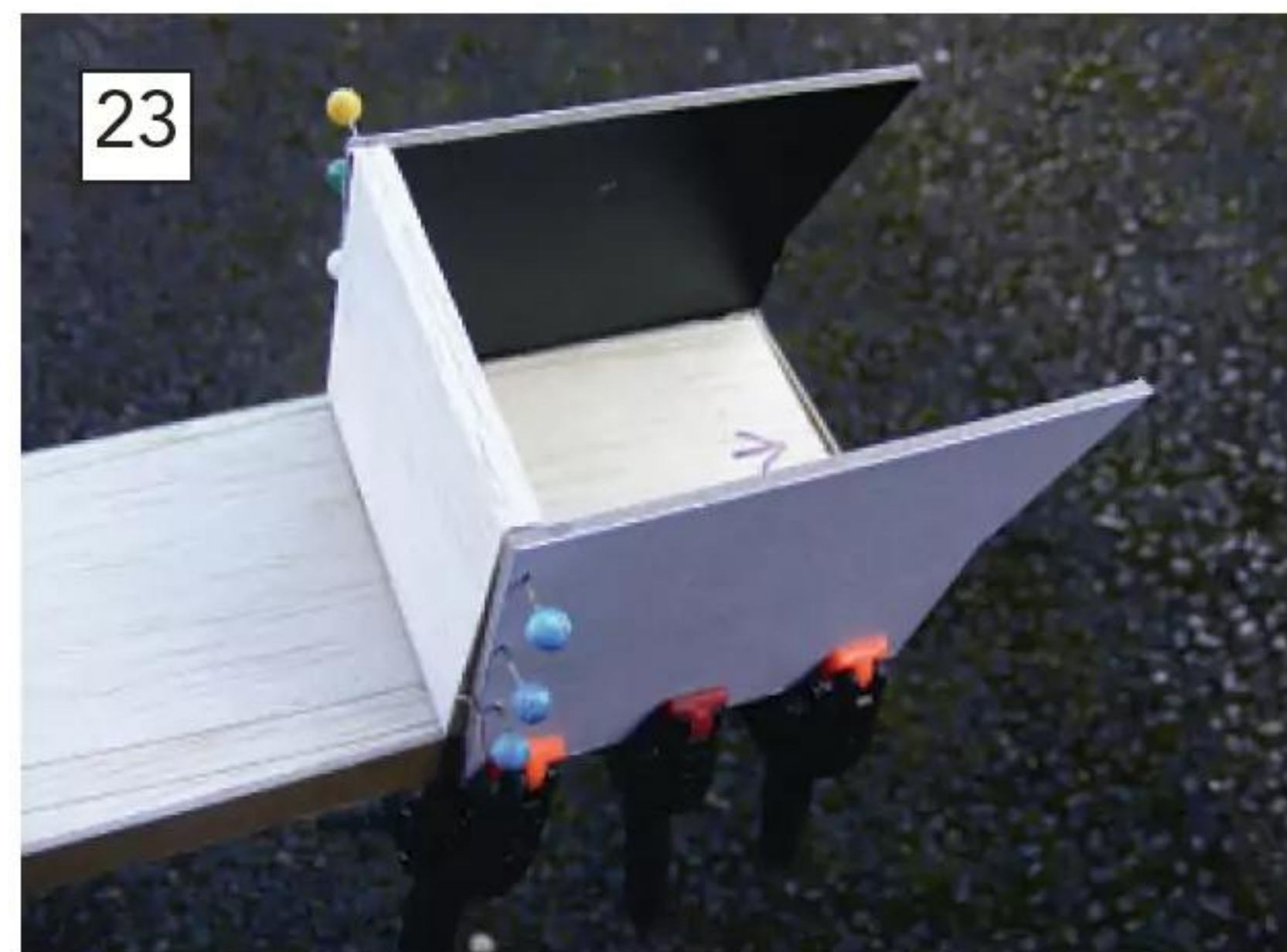
The last major items to add used copper wire stripped from domestic electrical cables. This formed the frame

to make the awning over the working area aft of the wheelhouse and the rails around the edges of the deck. These features were only loosely copied from the real vessels, so the decision of whether to add them or other things is yours (see **Photo 25**).

The aforementioned copper wire is very convenient to use once stripped from its insulation. It can be straightened with a firm force; just stop pulling when you feel it giving. It bends easily, and with little 'spring back' it keeps its shape. If mistakes are made, you can straighten copper wire and reuse it again. Joints between copper were made with solder but the uprights were sealed into holes in the hatch using epoxy.

favoured as its tougher than matt paints. The deck colour of the real boats was unknown to me, but a dull matt red seemed to look OK, while a subdued blue shade was chosen for the rubbing strips, lower part of wheelhouse and edges of the hatch. As for the wheelhouse windows, the easy route of using some black self-adhesive tape was taken and I now claim the boat has heavily tinted windows (see **Photo 26**).

Only when the paints had fully hardened was my model given a light dusting of clear satin varnish. This affords a clean but not unrealistically glossy appearance. It also protects any matt paints from picking up things like the dreaded oily fingerprints.

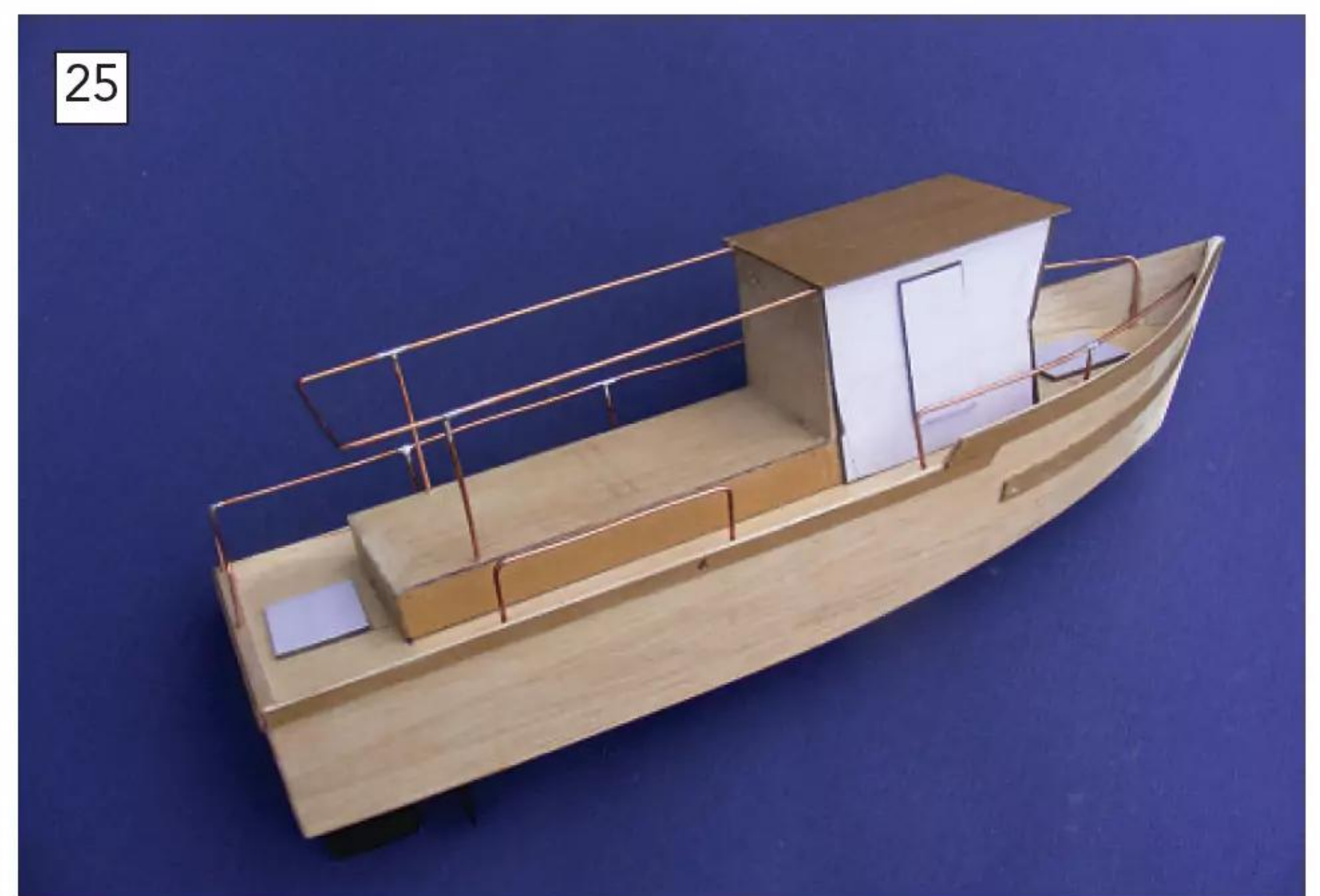
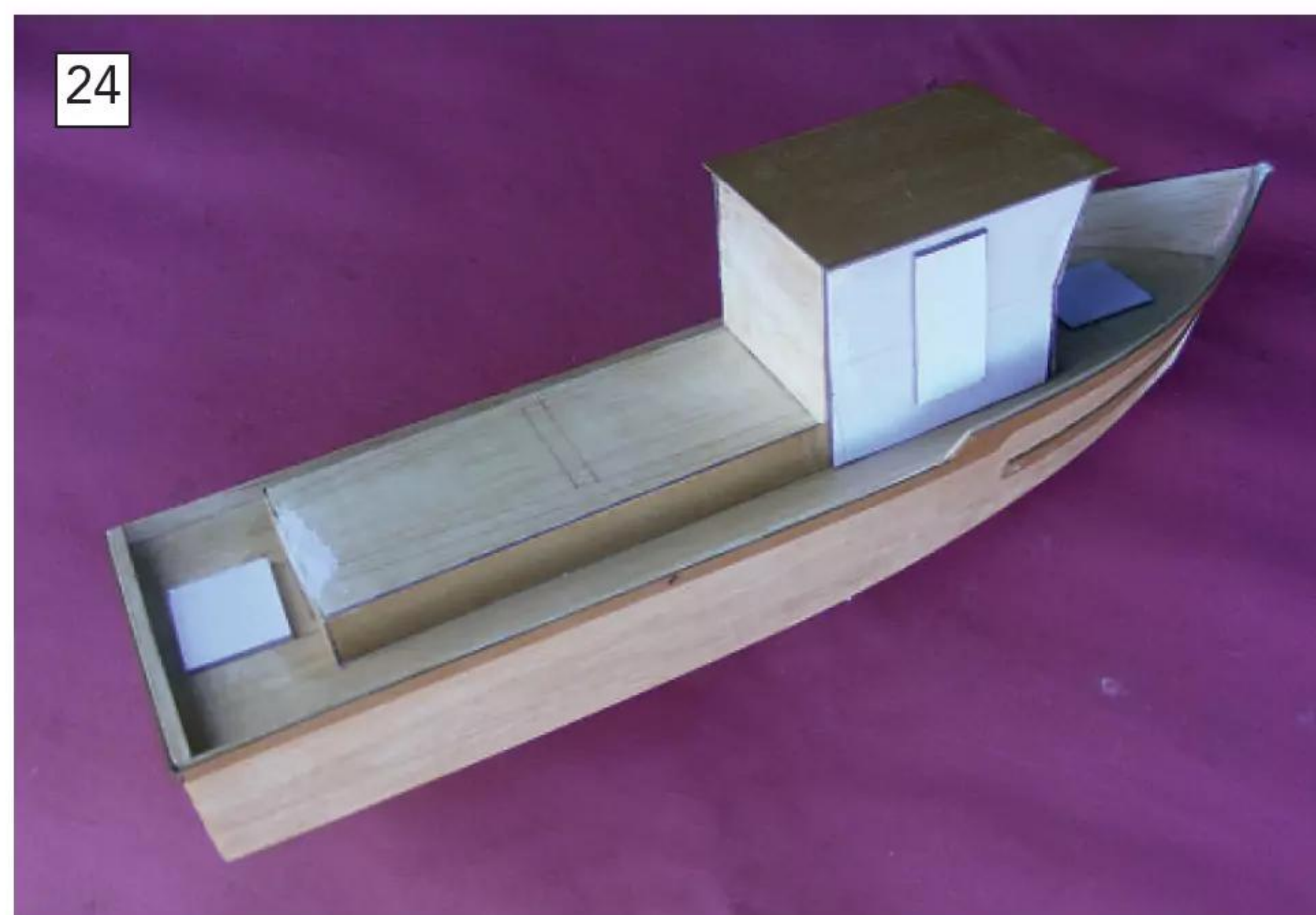


Painting

This is another area where you have free reign. Some of the boats we saw in the harbour featured vivid colours, but I opted for one of the more restrained schemes. White primer from a spray can was the basic colour used on the hull and wheelhouse. Below the waterline, a dark green gloss paint was applied, gloss being

Final touches

Again, more scope for variety. My canvas awning was made from some scrap fabric, which I stuck to the frame with contact adhesive. This proved somewhat challenging, but, luckily, the inevitable creases actually make it look more realistic. Some fine netting material has made a passable fishing net. Adding credibility with a few



finishing touches just needs a little imagination, although a well-stocked box of bits and pieces helps a lot.

The top of my wheelhouse was finished off with navigation lights, one on a pole mast. An engine exhaust, made from plastic tubing, emerges from the roof. Even small boats like this all seemed to feature a radar set, and my scanner simply came courtesy of a repurposed button (see **Photo 27**).

Sailing trials proper

Before all this, though, my model had to be rebalanced to allow for the extra weights added when finishing off the model. Again, sheet lead (builders' 'flashing' from a DIY store) was used, and this time it was secured into the hull. The model's weight at this stage was 22.5 ounces (0.64 kg). With the battery pack fully charged, the R/C gear tested, and the rudder checked for a maximum throw of 35 degrees either way, it was then just a matter of waiting for a suitably calm day (see **Photo 28**). Testing any new model in poor conditions will not allow you to explore its sailing behaviour with any accuracy.



“One of the delights of sailing this model is the character it exudes”

The floatation trials in the garden pond usually give me a good idea about a model's likely sailing characteristics and it was exactly so in this case. The rudder response was positive at all speeds, even astern! Holding a fixed course was not hard and any deviations caused by wind or waves could be corrected with little conscious effort; although, naturally, I don't suggest putting these virtues to the test in ridiculously rough conditions.

The turning circle diameter was around 5 feet (1.5 m) with the motor

at full power. At reduced power, the model turned even tighter. The top speed was about 2.3 ft/sec (0.7 m/s) – modest maybe, but this does look right for a small fishing boat at this scale.

Final thoughts

Having more or less been inspired to start this model following the rediscovery of some forgotten holiday snaps, the project turned out to be a most satisfying one. Reducing the originally intended size by half was something of a risk, as was the need to bend and twist balsa sheets more than usual. Nevertheless, building a model that presents a new challenge or two can be a very rewarding learning experience.

One of the delights of sailing this model is the character it exudes, plus the memories of that holiday in Malta. Added to that, being small and light, it's very convenient to slip in the car with my other models when headed off to my local lake. But even so, whenever I happen to glance over at those sheets of Liteply in my workshop, I can't help but think about building a larger version.... ●





THE ROY CHARLES

Colin Laugharne tells the tale of a tug model 26 years in the making!

Reading the book *The Gray Seas Under* by Farley Mowat, (see **Photo 1**), not just once but several times over, convinced me that as a Tug Master and model maker myself I had to pay my only little (well, not so little) tribute to the *Foundation Franklin* – not necessarily by building an exact scale replica but certainly something along the lines of the heroic North Atlantic tug featured in the story.

This was back in January 1998, although my interest in modelling goes back way further than that. As a child I was always looking at model boats in shop windows, but back then their 5 shilling plus price tags saw them totally out of my reach. I particularly wanted a Fairey Huntsman 31, kits for which were frequently advertised in *Model Boats* magazine, but that never happened – although as an adult I did eventually get to sail a full-size beauty! My dad, on the other hand, did build model boats, using the bread-and-butter method. The wood he used for planking came from old fish boxes picked up at the market down on the docks (back in ‘the good old days’, make do and mend was very much a way of life). I often watched him work on these models but was never allowed to touch anything. I’ll never forget the wood glue he used, though, which was made up from white powder mixed with water; I can’t recall the brand name, but it came in a tin

that had two horses pulling something apart on the front. Why am I telling you all this? Well, it’s the reason I decided I would name my finished tug *Roy Charles*, after my dad.

The build begins

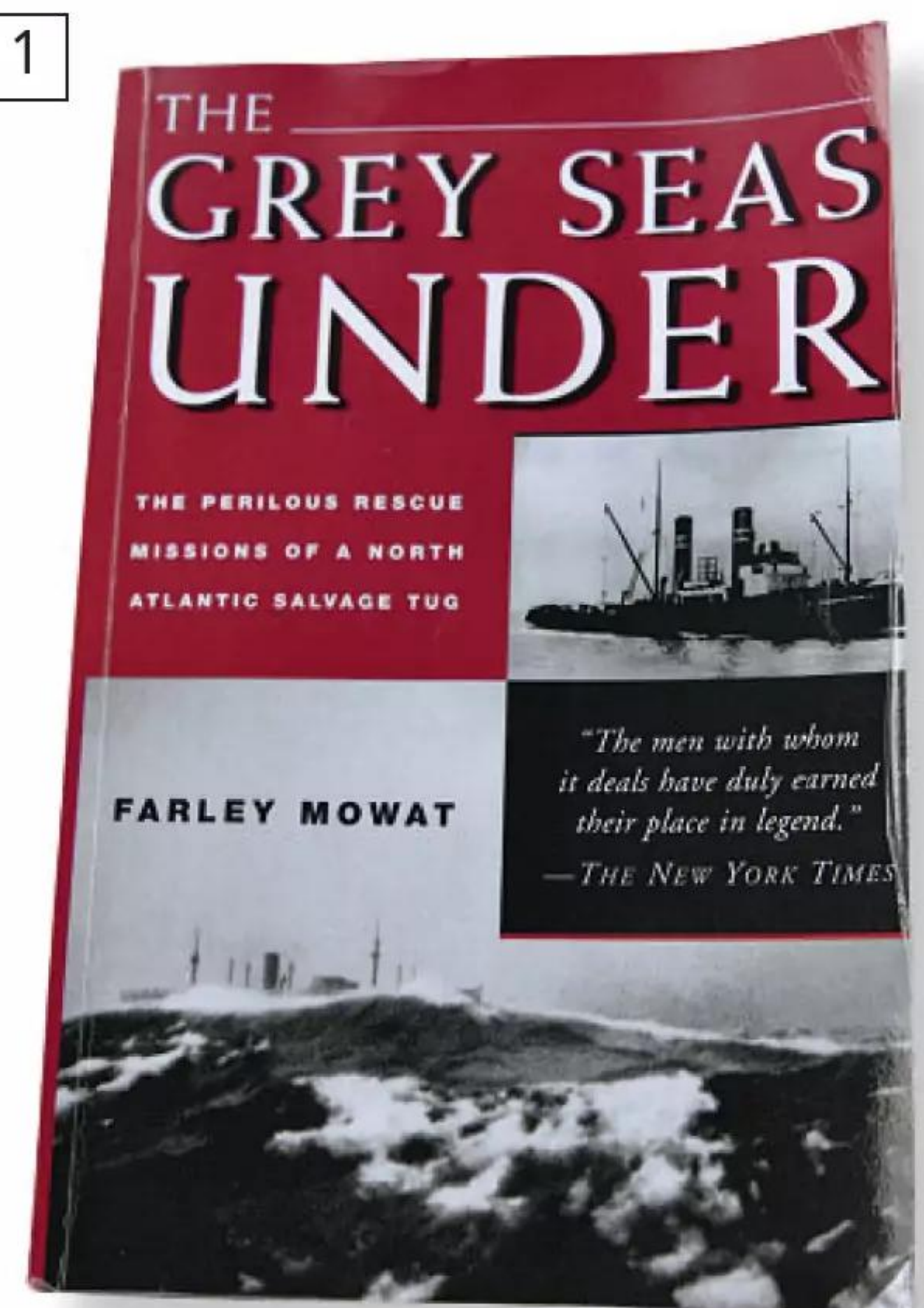
Luckily, a line drawing of the tug was included in the book (see **Photo 2**). However, while the aim was nothing grand, just something I could put on the water and sail for fun, little did I know I was about to embark on a long (very long!) build.

The drawing showed oil drums on the deck, and I happened to have a spare oil drum from another model I’d been making, so I measured the one in the book against the model one and worked out my model tug would be 7ft long with a beam of 16 inches and a water line of 7 inches. All I then had to do was make sure everything was to the same scale as the oil drum. What could be simpler?

I decided on twin propellers, as a single propeller would make manoeuvring a pain in such a large model.

Having no plans, this tug would be a figment of my imagination, so how it was going to turn out was anyone’s guess. I have a tried and tested method I use when building large hulls. Taking a block of polystyrene the size of my intended hull, I cut out the various parts and glue them together with PVA (using

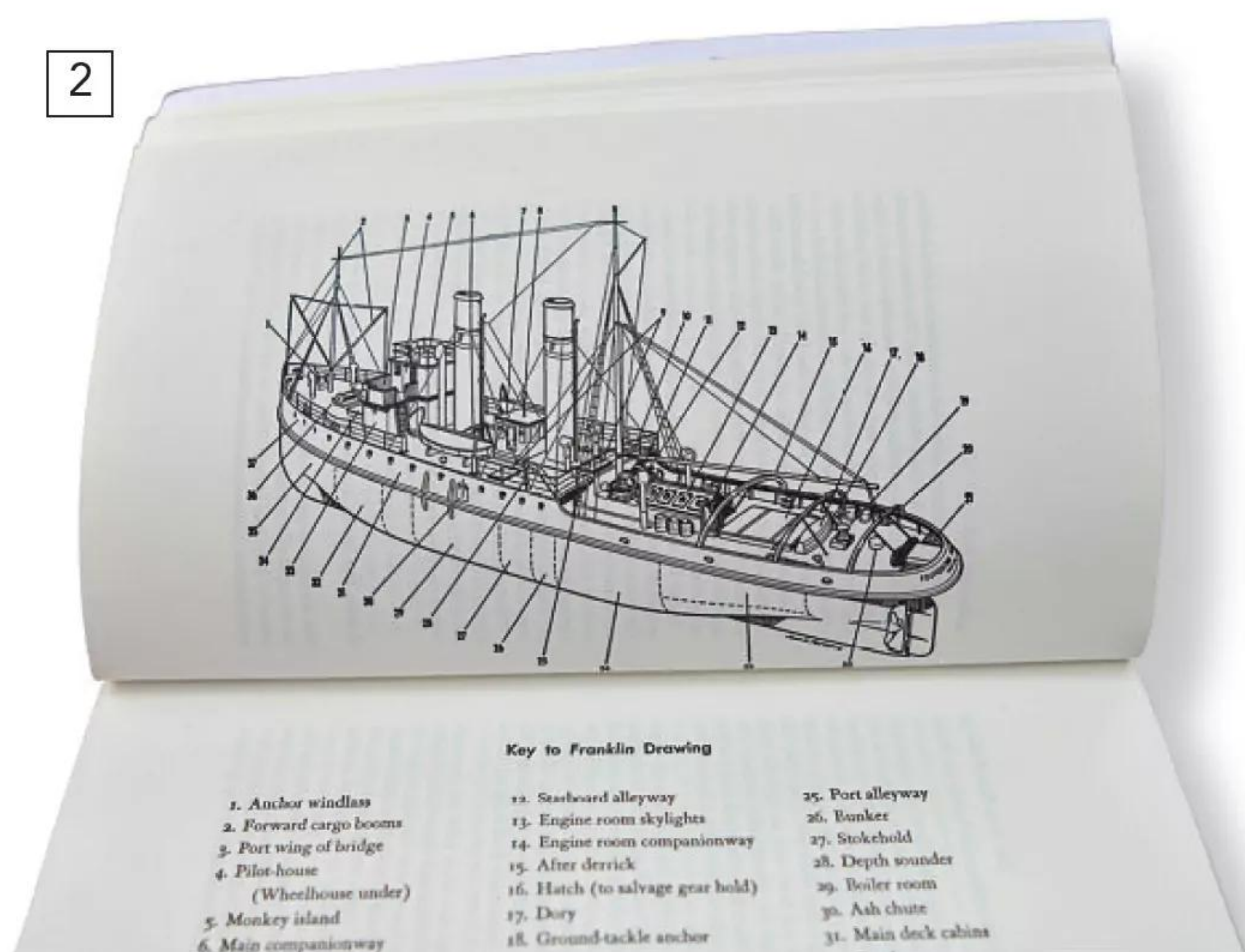
1



“Luckily, a line drawing of the tug was included the book”

cocktail sticks to secure everything while the glue dries). I then use a rasping file to achieve the desired shape, before covering the whole thing first in wall plaster, then in kitchen foil attached with PVA, before finally applying the fiberglass. Once this has hardened, the polystyrene can simply be pulled out.

2



4



“I have a tried and tested method I use when building large hulls...”

3



I used marine ply for the deck. To hold this in place, I glued garden hose around the inside of the hull; one 15ft piece created a good strong join between hull and deck. After adding a few wooden cross members for strength, I placed the ply on top. This was then marked around the hull, cut out and fixed in place, before creating openings in the deck (see **Photos 3/3a**) where the housing and the engine room casing were to go. Once located in their respective slots, these could still easily be lifted out, thereby affording ample room for manoeuvre when the time came to fit motors, batteries and electronics.

A hull as large as this would need big motors. Fortunately, in my shed I had a pair of very powerful 24-volt Radar Scanner motors (see **Photo 4**), which worked at a slow rotation speed and which I hoped, when run on 12-volts, would be perfect for operating my tug at a scale speed of 12 knots. Why is it that so many modellers want all their models to run like a speedboat, rather than simply being content with a scale speed more suited to their vessel type?

Propeller tips

I find that when working on sizable models it's always best to fit bigger propellers than the scale of your boat would initially suggest, as this will greatly assist with manoeuvrability.

I opted to fit this boat with twin four-bladed props of 5in in diameter, one of left- and one of right-hand rotation. Also, I would need them to be inward turning. I make my own props when building a large hull, as experience has taught me you need a very big pitch on the blades if they are

3a





“I make my own props when building a large hull, as experience has taught me you need a very big pitch on the blades if they are to function properly”

to function properly. Standard props look very nice, but just don’t work as well as they should (see **Photo 5/5a**)

The shafts were made from steel rods fitted in steel tubes (see **Photo 6**). I fitted grease nipples to each tube then filled with thick gear grease to keep out the water.

Tug ballasting

Just as with the rudder, my tug also needed an over-sized servo to work well. For power I installed a car battery, as the weight would act as ballast, and I knew I’d need a lot of that for a hull of this size. I never ballast my models to sit on the waterline; a real tug only reaches this when full of fuel and water, and that will only be for a few days. Besides, I

think models look more realistic when they’re not down to their waterline. Wishful thinking perhaps, but I’ve been toying with the idea of one day fitting self-filling water tanks, which will fill when placed in water and empty when taken out.

Making a start on the superstructure

The housing was put together with pieces of wood found in my shed. I covered the wheelhouse in cocktail sticks, which were then sanded down flat to imitate pine planks. To be honest, I wasn’t particularly happy with how this looked (see **photo 7**), but it will do.

For the funnels, I used grey sewer pipes. Having cut sections to the

right height, I painted these black and white, affixing dragon badges to the central white bands. (see **Photo 8**). The masts were made from two arrows ‘borrowed’ from my son’s archery set, as being hollow these were ideal for me to run the receiver aerial through, keeping it out of sight.

But then, due to various other commitments, work on the *Roy Charles* slowed and eventually stopped. And while my unfinished tug was left languishing in the garden shed for the next eleven years, unbeknown to me my own health was gradually but seriously deteriorating. The crunch finally came one day when I was told I had only weeks to live.

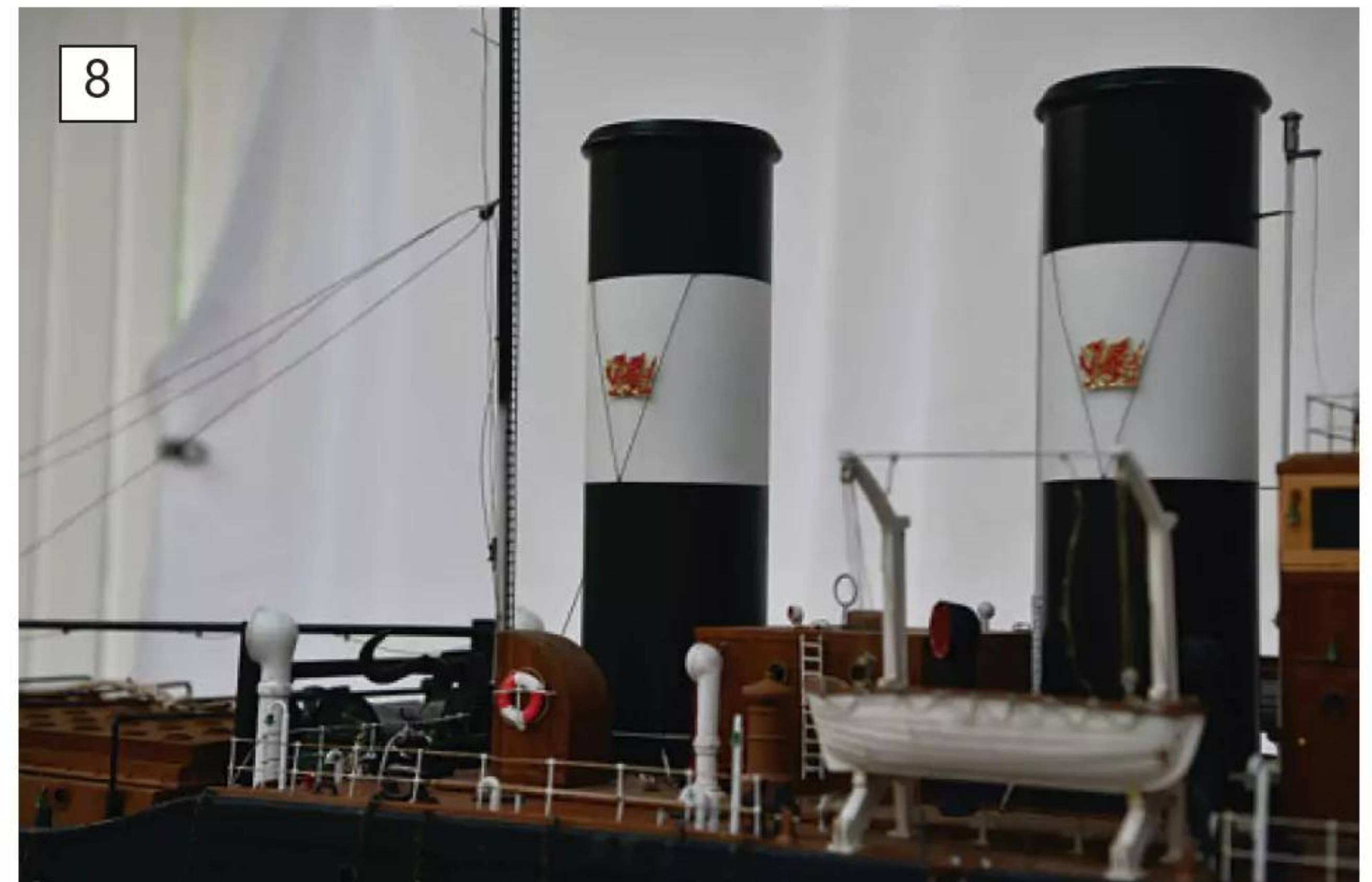
Turned around with some TLC

Thanks, however, to my lovely wife, I got through heart surgery and began my recovery. It was during this time that I found myself confiding in my neighbour Stuart about the struggle to motivate myself. It was he who suggested I start working on model tugs again, explaining that what he most admired about my models was the realistic way in which they were finished/weathered, in his eyes making them look far more convincing – a compliment indeed, as Stuart is a retired ship’s engineer. My wife Shirley wholeheartedly agreed with him, further goading me on by coming up with the idea of turning our conservatory into my workshop. This, she pointed out, would be a much warmer option than the garden shed for me, and much easier for her in terms of keeping the coffee and snacks coming while I worked – yes, I’m a very lucky man!

The project most crying out to be resurrected was the *Roy Charles* – not least because I still had a large Tupperware cakebox full of accessories that I had bought for this particular model at various model boat shows over the years. Opening

“I never ballast my models to sit on the waterline; a real tug only reaches this when full of fuel and water, and that will only be for a few days”





it up again felt like Christmas! I had completely forgotten the sheer numbers of bit and pieces I had purchased.

Resuming work on the portholes would be my first job. I'd already made a start on them but with 98 in total there were still plenty more to fit. Likewise, handrails, which came next. I noticed straightaway that not all the stanchions of which there were 83 - some already fitted, some still needing to be matched. I remember dad always used to say "If no-one notices your errors, then don't point them out" - so fingers crossed! How I did I fit them? Well, first I drilled all the holes in the deck. I then threaded wire rails through my uprights before placing them into their respective holes. Next, I soldered the ends of the wire rails to the ends of the uprights and applied a drop of glue to each to hold them all in place. Once this glue had set, I was then able to remove the rails for spray painting. With this task

complete, they were reinstated, and glue applied.

A cast metal steam windless, two capstans and two winches for the boom crane were rediscovered in my trusty Tupperware treasure trove, so were duly painted and glued into place. I was equally pleased to find a good selection of cowl vents (six pairs, in different shapes and sizes) that could be added to the ones already I'd already fitted. So, I painted these, too, decided where each would go, drilled fixing holes into which I could insert them and glued them in. Things were now progressing well.

Running low on supplies, I had to resort to pillaging more paint from an old painting-by-numbers kit (my daughter's, I may add, not mine!). These little pots of colours, however, proved surprisingly perfect for finishing up some of the smaller pieces that still required painting, such as the lantern boxes that sit port side (red) and starboard side (green).

In 1968, or thereabouts, when I was a deck boy on an actual tug, I was told by the tug master to paint our tug's port and starboard navigation lantern boxes matt black, so that is what I did here (see **Photo 9**).

Having managed to find ten life rings of the right size for this model, I painted them red and white. I then drilled four holes in the divisions between red and white, which I threaded with cotton (to effect rope) and mounted using Gorilla contact

adhesive (I wish I had discovered this excellent product years ago!). I then made a stupid mistake. All of these life rings were glued into their respective holders with the red at the top and bottom. So what, you may ask. Well, life rings of this period carried the ship's name and port of registration in the top and bottom white sections respectively. Good job the glue had not set hard!

"I then made a stupid mistake..."

My model was now starting to look pretty decent. I'd found 20 cast metal bollards of various sizes in my Tupperware box, and all had been given a coat of matt black paint, before being fitted to the main and after decks. I'd also found some spare anchors, which I glued to the deck close to the bow (on the 1:1 scale vessels, spare anchors were always placed there for instant accessibility). Likewise, I fixed the ship's bell (a very important piece of equipment, and certainly not simply for show, as some may be forgiven for thinking) to the foremast, (see **Photo 10**). Some deck skylights, made in France and cast in plastic, proved perfect for this model (see **Photo 11**) and these I fitted on the fore deck, together with two coal chimneys the H type. I made a two-porthole skylight myself, surprisingly perhaps, from a piece of LEGO. I initially painted my skylights white, but they just didn't look right, so I



tried black. Still not happy with the look, and deciding they needed to be brown, and a 14ml tin of Humbrol enamel, costing me just under £3, produced an acceptable, if not perfect, result. A pair of lifeboat davits fitted many years beforehand were ready for a couple of lifeboats shells waiting in my box of tricks to be fitted out (see **Photo 12**.) There was also a good selection of pulley blocks of all different size and shapes I was able to make good use of. The lifeboat davits

required the biggest, while the mast was served by the smaller wooden ones; all looked the part. Three paraffin towing lights were placed on the foremast. I made an anchor ball and a towing diamond, both of which I painted black, and used fine thread as halyard ropes, placing these ready to be hoisted up on the main mast.

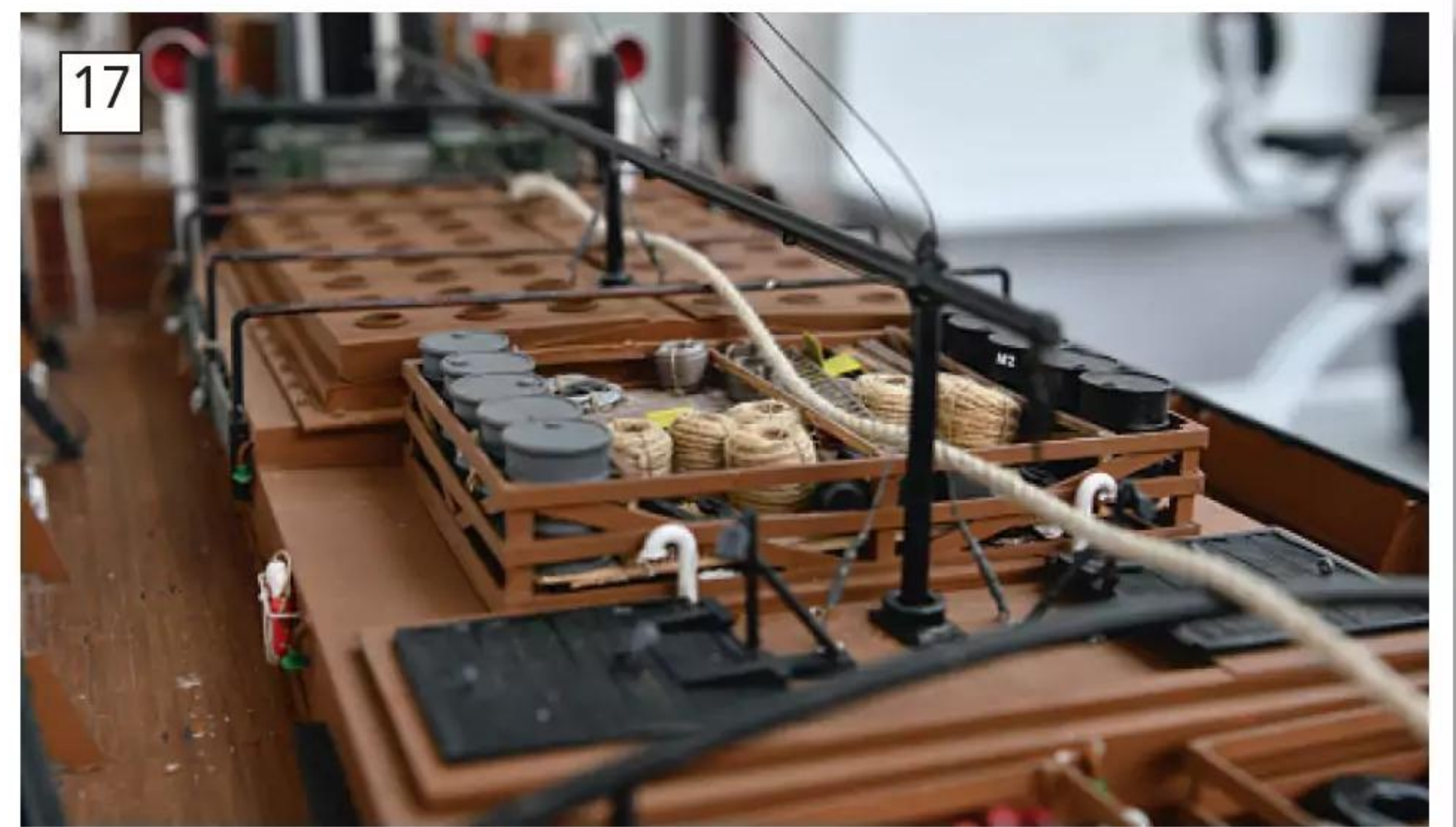
More gems rediscovered in my accessories box included a figure of a bearded man sporting a hat, duffel coat and wellington boots, who I

painted to my best ability. I realise now that he's a little too big, but he'll do until I find a more suitably sized replacement (see **Photo 13**). I fixed him to the top of the wheelhouse, together with ship's wheel and binnacle and a sound pipe. I found two more ship's telegraphs, one to go on top of the wheelhouse and one to fit aft of funnel, and each wing of the bridge now has a telegraph which I fashioned from key rings. I had no gooseneck vents in my box, and needed 36 of these, so I sent off for them together with 64 tyres for the fenders and some chain to fix them to the hull. I painted these goosenecks white and made filler pipes from brass bolts. I also used these bolts for sounding pipes for each tank. With these parts all glued in place (see **Photo 14**) one could immediately envisage her cutting her way through heavy seas in order to aid her casualty.

As they say, though, pride often comes before a fall, and I then hit a couple of snags. Firstly, one of the two Viper Marine 15s speed controllers I fitted went up in smoke! This was entirely my fault, as instead of properly reading the instructions I thought I could get away with a quick glance at pictures in the manual. Wrong! Also, I discovered that the 30 grains of rice bulbs for deck lighting I'd wired up years ago (see **Photo 15**) would no longer light up and that I'd have to swap out for new ones. Here I redeemed myself by making new ones from pop rivets (a recently acquired skill learnt from an internet tutorial). By doing so, not only did I save myself about £40 on the cost ready-made replacements but, once mounted to the new posts I'd made and fitted with green light shades, they actually looked much better than the original rice bulbs would have, being far more in keeping with a vessel of this age (see **Photo 16**).

Some commercially sourced items, however, really did prove worthwhile. The set of ladders I bought to run up the mast, once painted and very easily fitted, instantly transformed the overall look of my mast. I also ordered some deck gratings. These were the type that need to be put together yourself, as some odd shapes and sizes were required. To be honest they didn't go together that easily, but they were of excellent quality and a little bit of patience paid off big time.

On the engine room casing, I fitted a store box (see **Photo 17**) into which I placed various odds and ends, such

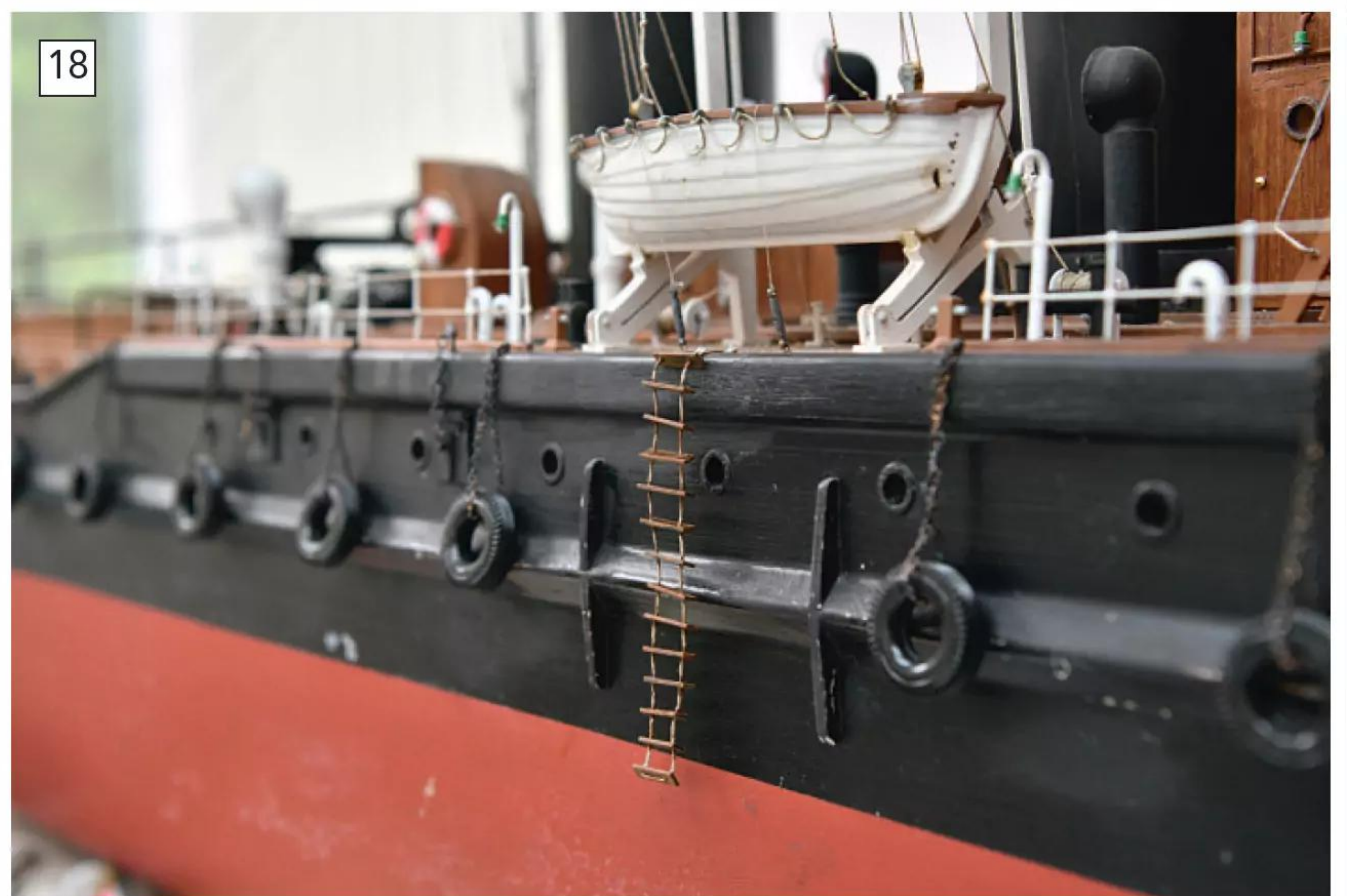


“Instead of properly reading the instructions I thought I could get away with a quick glance at pictures in the manual. Wrong!”

as coils of rope and wire, oil drums, etc. We always had lots of oil drums on the deck of the tugs I served on. For some reason, engineers seem very reluctant to keep oil in tanks in the engine room!

I made my own aft boom crane and found a pulley block with hook in my box. I fixed the pulley block's running wire to the steam winches on the main deck aft of the funnels. I wanted to keep the mast removable for transportation, so that the model will all come apart and lay flat. The aft mast flies the red ensign, and as the flag staff is fixed to the mast, I needed a large size pin that would look the part. On the cross tree I am flying the courtesy flag of Wales, just in case I ever get to sail her at the port of Milford Haven.

I am currently undecided whether I am going to leave the two pilot ladders I made (see **Photo 18**) hanging down the sides or roll them up and place them under lifeboats; you'd often see ladders hanging from the rails after a pilot had boarded a



ship. Using 4mm hemp rope I spliced two eyes and fitted one end to the wire on the towing winch, while the towing chains I've shackled to the out-board end.

My ship is coming in...

It's taken me more than a quarter of a century to get this point, but the

finishing line is now in sight. So, what pearls of wisdom can I share with anyone else years into a build and wondering if they'll ever get there? Without doubt, it has to be this: a hobby should be about escaping the stresses of everyday life, not adding to them, so try to just relax and enjoy the journey, however long it takes! ●

ON FREQUENCY!

Dave Wiggins hits us with another wave of nostalgia

At the very beginning of the R/C game, c.1949-50 or so, nearly all R/C flyers and boaters built their own radio gear – for the best of reasons, this being there was almost no commercial equipment available. Consequently, even the least knowledgeable amongst them could boast a certain level of theoretical understanding and hands-on experience because fabricating items using data found in magazines such as *Model Maker* was often their only option open to them. Examples include ‘wave-meters’ (for crude frequency checks), crystal oscillators (for receiver tuning), and multi-range volt, resistance and current measuring instruments – homemade and much simplified versions of commercial test gear, such as the famous British Avo Meter (an item set to be featured in this series next year).

Even though I started in the hobby as 'late' as 1962, I, too, joined the happy band of home test gear and radio builders. The essential point to grasp is that you couldn't build a transmitter or a receiver without having built at least some test gear first. Even in the '70s (by which time all R/C gear was crystal controlled), building your own test gear was still an important facet of repairing commercial gear or building R/C kits, so I will begin this month with an interesting and useful little electronic test item that some of you might find of more than passing interest if still owning and operating 27 or 40 Meg AM or FM radios, a crystal tester...

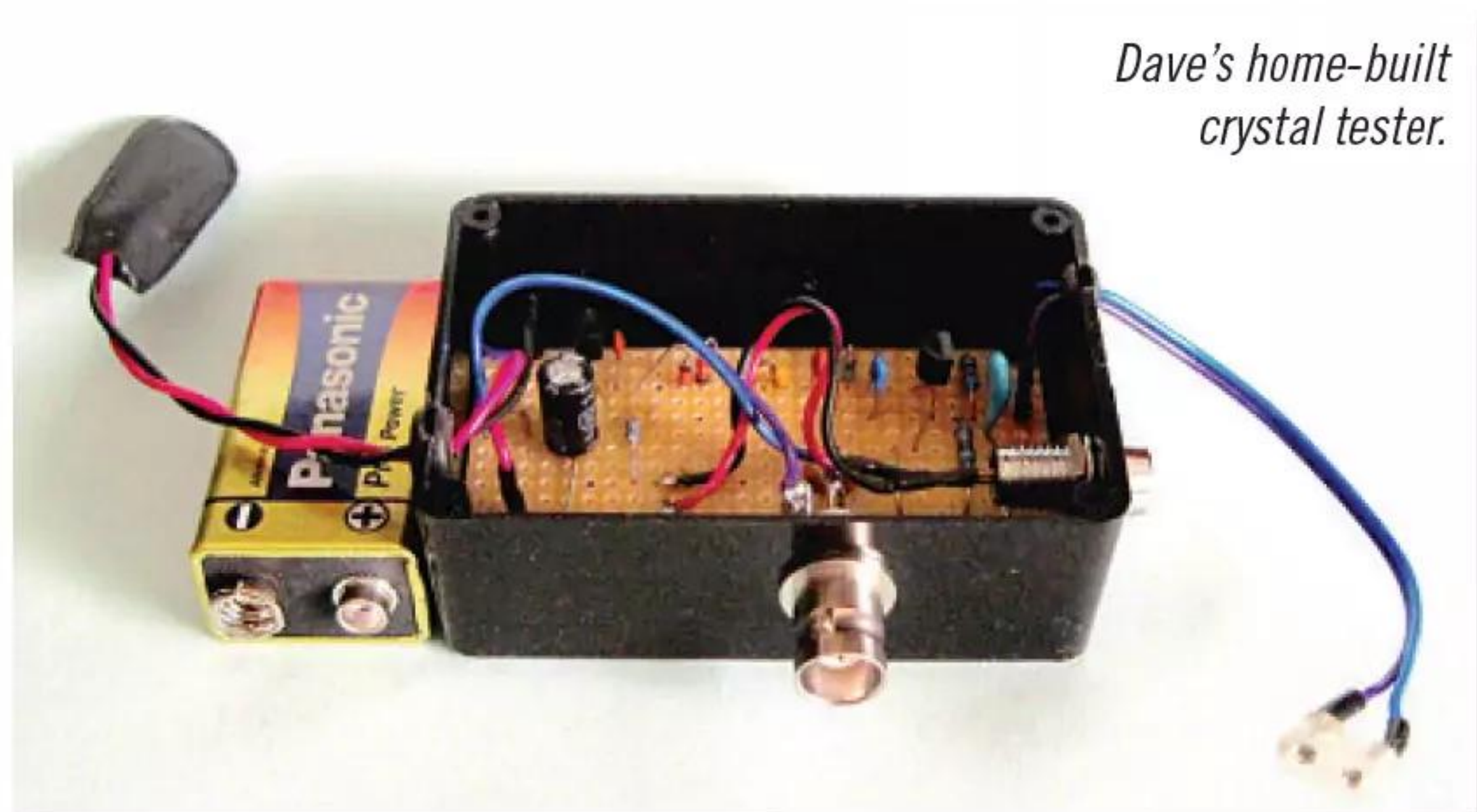
Testing quartz crystals

Quartz crystals (see the Skyleader receiver featured) were an essential component in virtually all vintage R/C systems built from the mid-60s onwards and here I illustrate a variety of case sizes and styles from both US and Japanese makers.

Usually, in radios sold with modern Superhet receivers, a crystal was fitted in both the transmitter and receiver, and such crystals tended to be sold in pairs, whether for 27, 35 or 40MHz bands in the UK or on 72/75MHz overseas. In the better very early 1950s' valve radios a crystal was fitted in the transmitter only, as receivers of that era were not capable of multi-model operation.

The most frequent cause of crystal failure was mechanical shock, usually resulting from a model aircraft crash. Boats were less susceptible to such shocks but, all the same, I have encountered crystal failure in the model boat world, most likely as a result of rough handling.

A simple and rapid means of testing this vital component was, therefore, desirable, and my first item is a typical example of such a device. In the true spirit of the past, this was recently home constructed by me from designs first published out in the USA during the 1960s (my thanks to Pete Waters of Michigan for a schematic) but republished in a British electronics magazine (*Everyday Practical Electronics*) as recently as February of 2018. I have seen three different versions of this circuit diagram (schematic in USA), and there are virtually no differences in any of them. My crystal tester has a co-axial socket added to permit monitoring of the waveform that the crystal under test is



*Dave's home-built
crystal tester.*

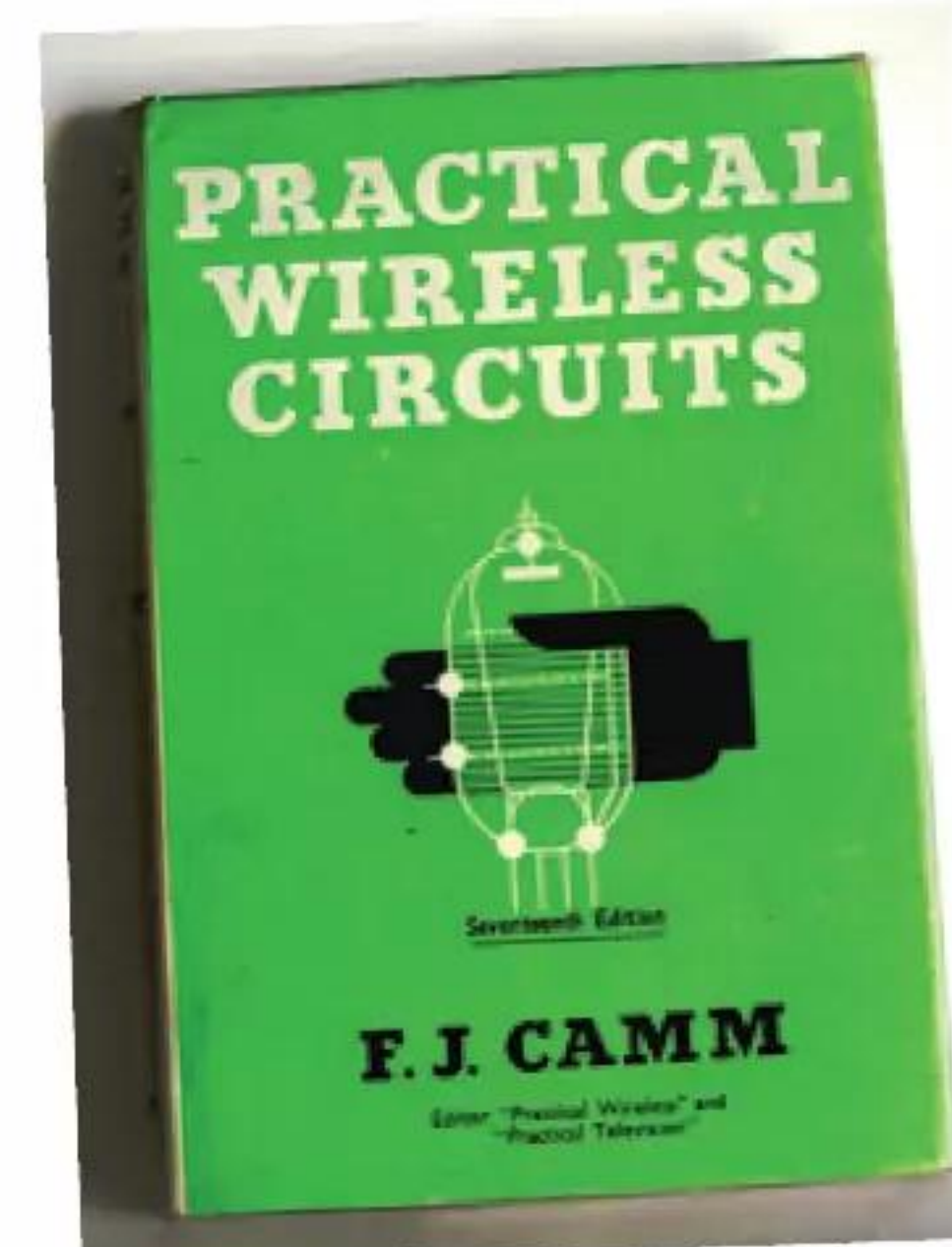


*A selection of crystals
from American and
Japanese radios
c.1975.*

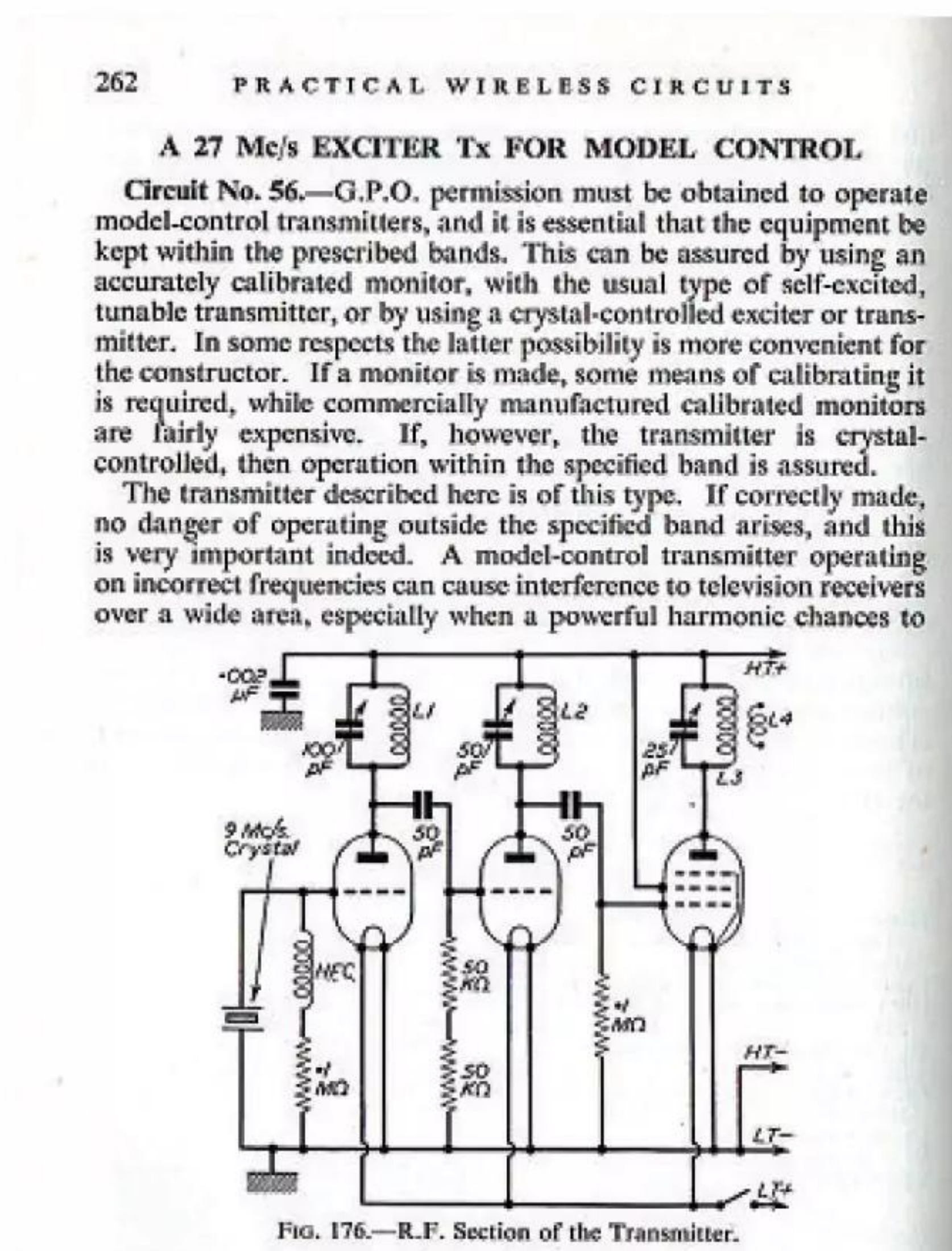
producing, either on an oscilloscope or on a frequency counter.

When using a counter, you need to bear in mind that the read-out you get will be $1/3^{\text{rd}}$ of the case marked frequency (i.e., a crystal marked up as Transmitter = 27.045MHz (red) will really be a 9.015 meg' crystal). This is simply because 27MHz or higher frequency crystals are harder and much more expensive to manufacture than those resonant at 9MHz, and it was always normal practice in the R/C business to use a 9 Meg' crystal and 'pick-off' the 3rd overtone (a harmonic) by means of a tuned circuit.

Other frequency quartz crystals were sometimes used, and I illustrate a very early example taken from the Newnes book featured next. In F.J. Camm's early circuit, a 13.5MHz crystal



Practical Wireless Circuits by F.J. Camm (Newnes 1957).



An example of 'overtone' crystal use c.1957.

is employed to the same effect. being $\frac{1}{2}$ of the final radiated signal required (i.e., half of 27).

Circuits

Talking of radio circuits, here's a book load! First published by the well-known author F.J. Camm in 1931 (my copy is a 1957 edition, priced at 17 shillings and sixpence), *Practical Wireless Circuits* (Newnes 1957) contains several early valve designs, of which I illustrate just one – a 3-valve 'modulated' Rx intended for reed control and most likely originating from the firm of ED Ltd. Like all receivers of the period, the high frequency part of this circuit is a 'super-regenerative' detector, suited to the operation of just one model at a time.



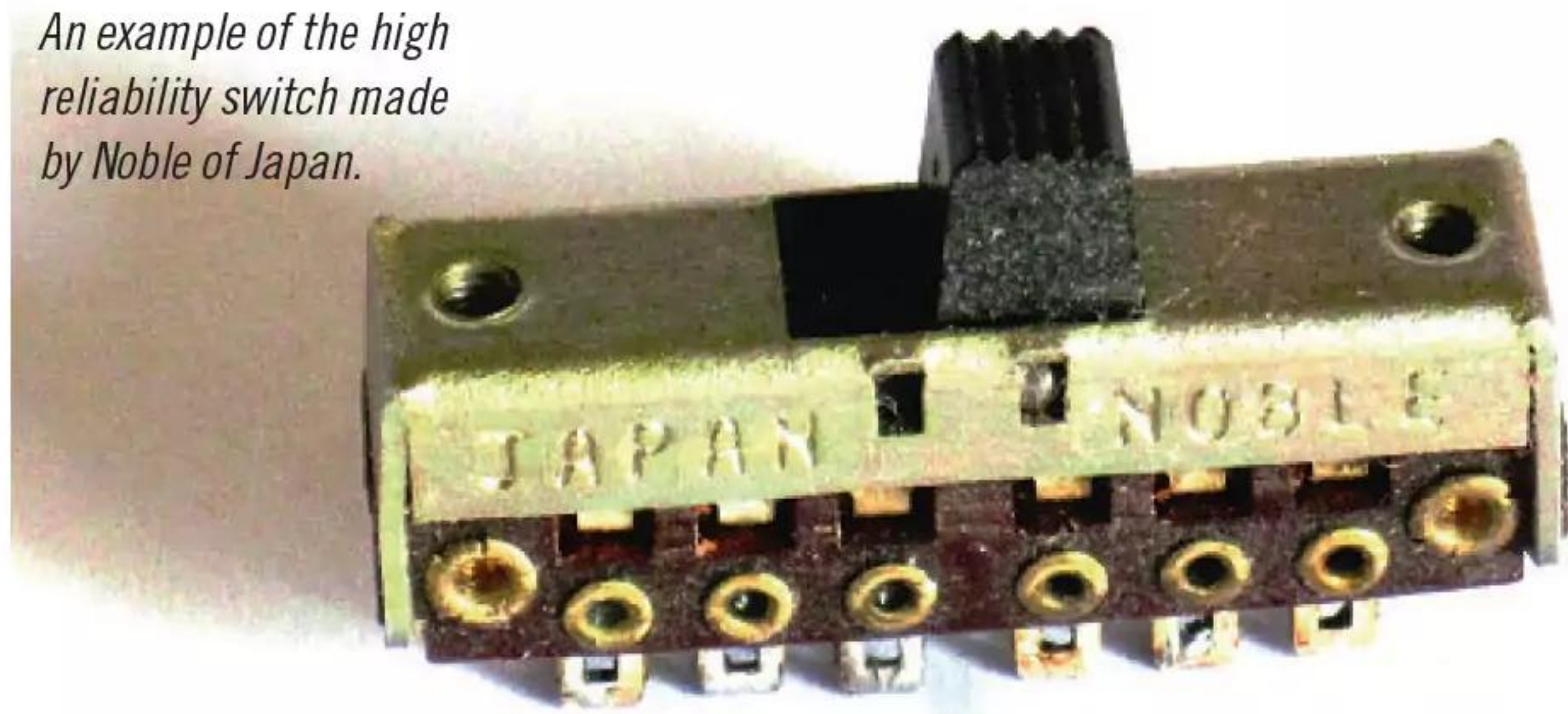
A couple of popular 'miniature' radio valves for 1950s' R/C gear.

Using 'valves'

Also illustrated are a couple of radio valves from the early days of (pre-crystal) R/C circuits. The DCC90 (a.k.a. 3A5) was the most popular 'bottle' specified in almost all the first generation of 27MHz carrier-wave transmitters.

A double triode (i.e., two valves in one glass envelope with a 7-pin base and a 1.4-volt filament), originally developed for use in World War II backpack radios, was simply ideal for the first R/C transmitters, producing plenty of power. In the early days, up to 5-watts of power was permitted by

An example of the high reliability switch made by Noble of Japan.



PRACTICAL WIRELESS CIRCUITS

With relays of other than the tuned reed type it is desirable to shunt the relay winding, as in Fig. 185, with a condenser of about $\cdot 1 \mu\text{F}$ upwards, to prevent the armature responding to the audio-tone, or "singing." The selection of a specific audio-tone may be achieved by using a L.F. choke of suitable inductance, so that it is resonant at the desired frequency. The circuit will then be unresponsive to tones of other frequencies which may be radiated to control other equipment. If the control of two or more relays of this type is required, the output stage should be duplicated, each valve being wired to a choke of different resonant frequency. The various relays may then be controlled as desired by adjusting the frequency of the radiated audio-tone.

This three-valve circuit can be used with a tuned reed relay, when ordinary bias is applied to V3. When used with the ordinary type of relay, sufficient bias is used to obtain cut-off of anode current as explained.

Practical Considerations.—As mentioned, correct operation of the super-regenerative detector is essential for best results, and it is of great advantage to wire phones temporarily in circuit when initially setting up the receiver.

Details of the coil used will become apparent from Fig. 188, the completed coil being mounted directly above the butterfly tuning

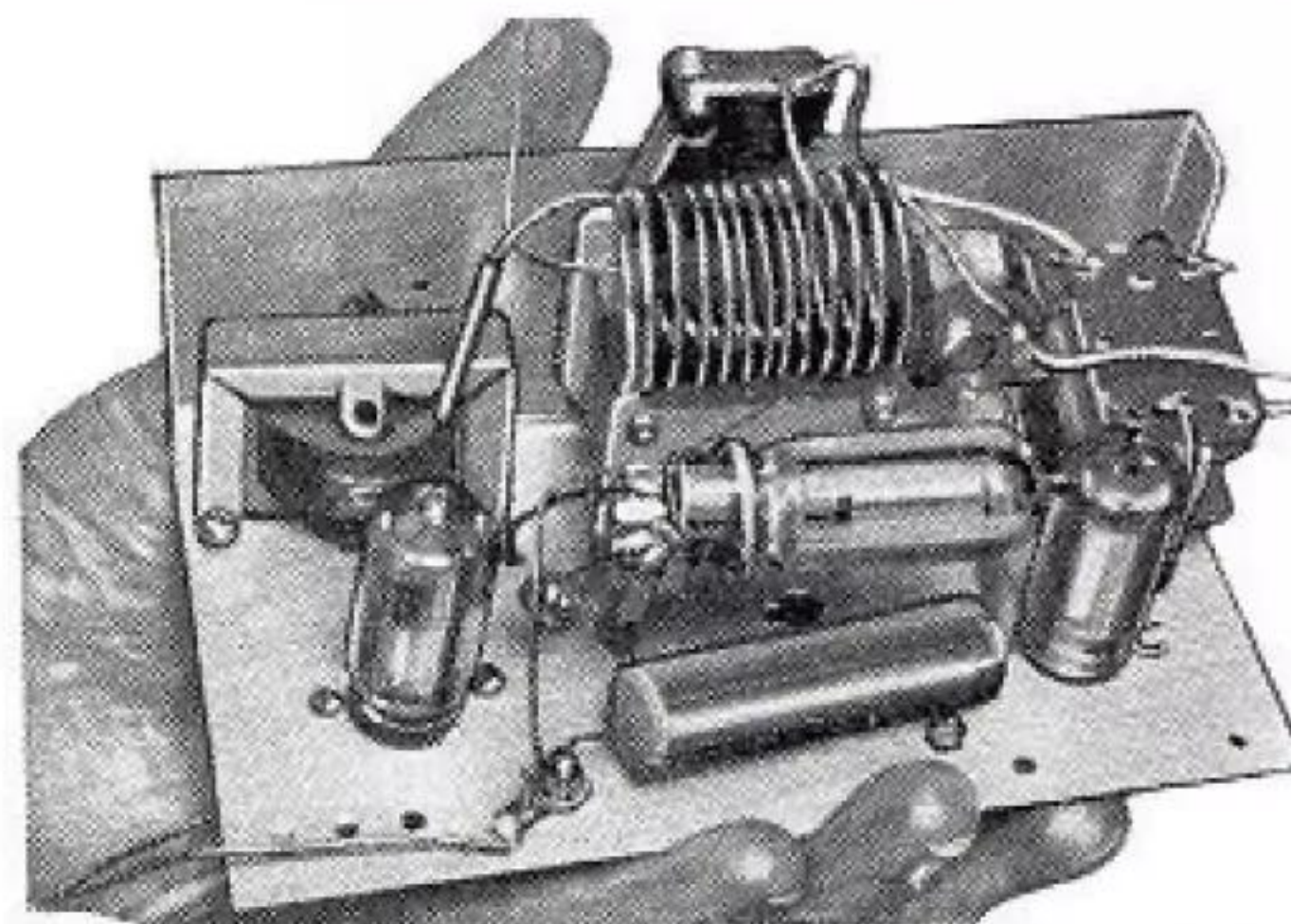


Fig. 186.—The Size of the Receiver may be judged from this Illustration.

An example spread from Camm's early book on model R/C.



A Skyleader SL-X receiver with plug-in crystals and flying lead connectors c.1978.

the Post Office (who issued transmitting licenses), later reduced to 1.5-watts. These figures seem staggering to us today but back then were necessary, as early receivers were so very insensitive.

Skyleader of Croydon

Coming much more up to date, and before we leave crystals behind, I am including a nice example of a British receiver built by Skyleader of Croydon (owned by Stewart Uwins) around 1975-80 for its popular model 'SL-X' set of that period. 'Plug-In' crystals permitting frequency change at the pond or flying

field were used together with the SLM-made 'block' connector then popular, but here are shown wired onto 'flying' cables. I covered Skyleader receivers at the end of last year, so won't labour though them again. More on this

PRACTICAL WIRELESS CIRCUITS

condenser in Fig. 187. Here "A" on the coil is taken to the left-hand section of the condenser, and detector anode. The tapping (at the 4th turn) is taken to the condenser transformer primary, while end "B" goes to the grid-leak and condenser.

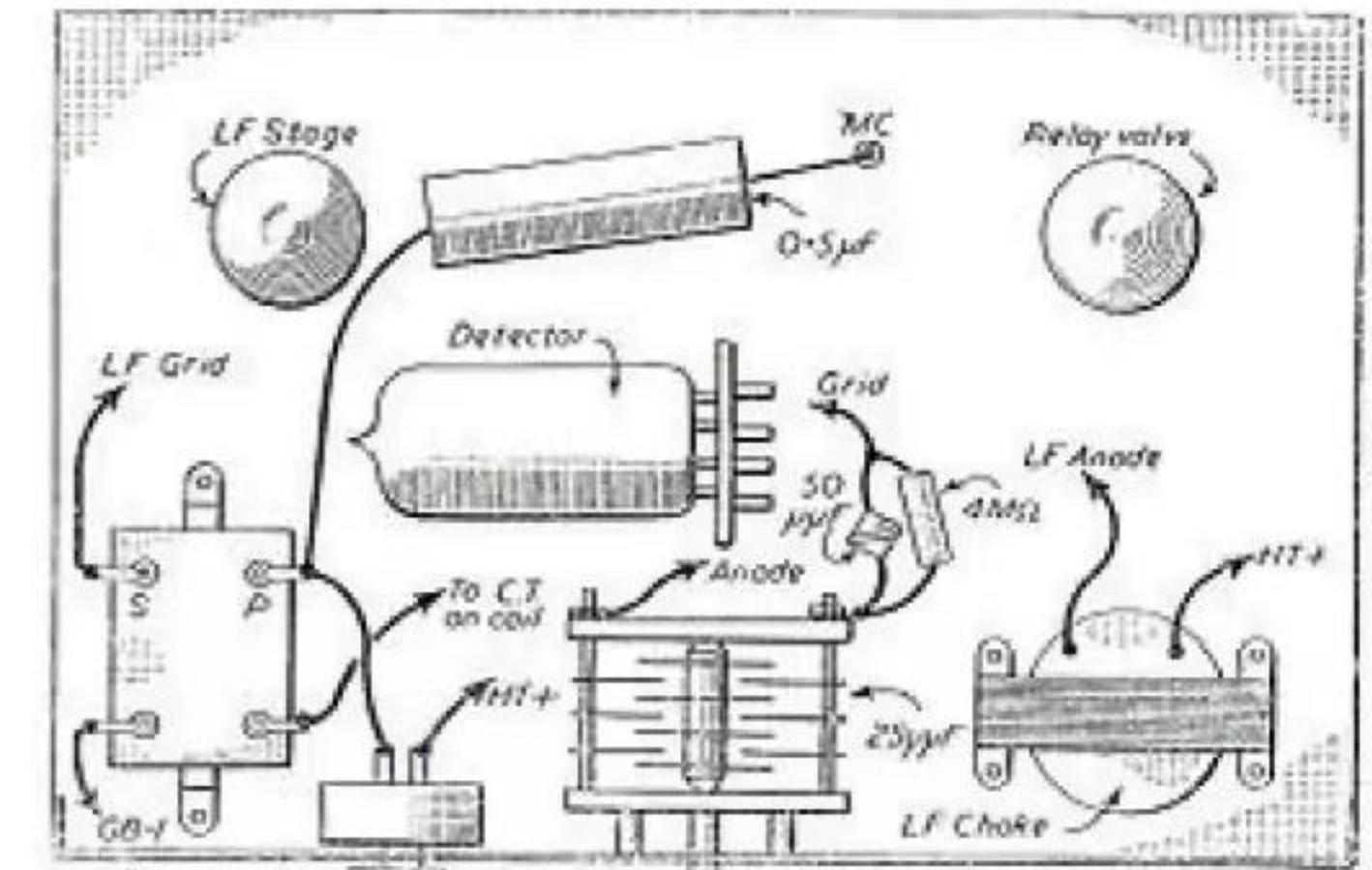


Fig. 187.—Layout Adopted in the Receiver.

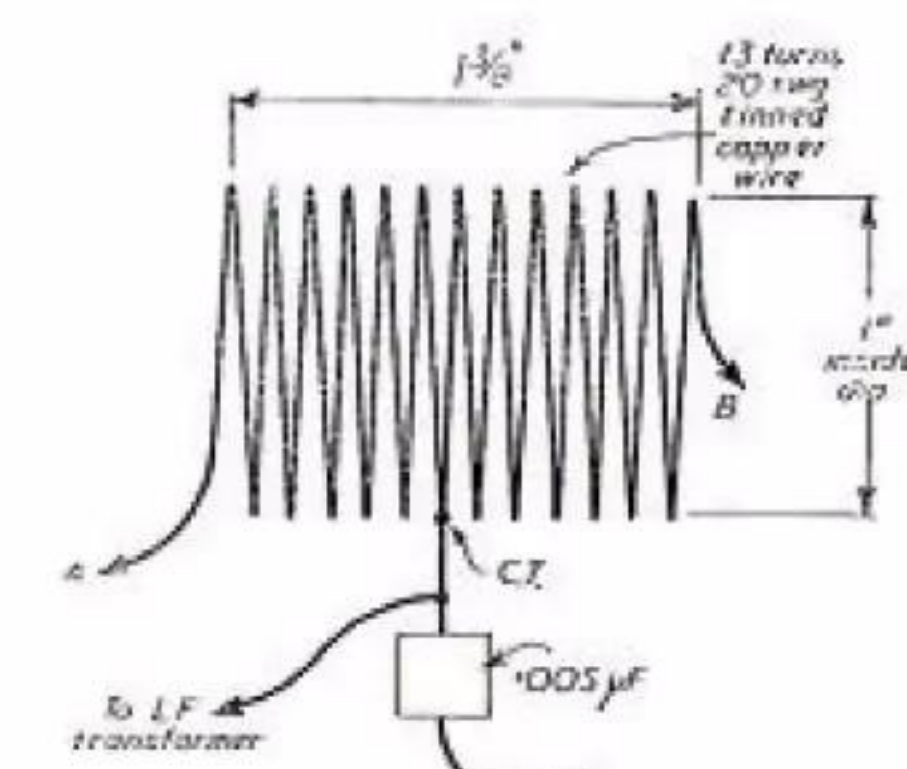


Fig. 188.—Details of the Tuning Coil.

P.W.C.—9*

Skyleader SRC1 servo mounts in their original packets.



topic, however, is planned for in for some time next year.

Another useful Skyleader product that I tripped over more or less by accident is a brace of brand-new servo mounts for the firm's very popular SRC1 linear and rotary servo. Skyleader sold these mechanics to many smaller British R/C concerns, so such mounts have a wide appeal as a result.

Quality switches for R/C

From the very start, suitable power switches of high reliability under extremes of stress, fuel ingress and vibration were essential add-ons to any radio control system. During the tenure of the proportional control idea, wherever such radios were built the 4-pole slide switch manufactured by Noble of Japan was recognised as the ideal component for use in both transmitting and receiving systems, and 'as new' examples are still much sought after. Illustrated is one such example from my own rapidly diminishing supply. ●



Richard Simpson urges you to consider your 'operational philosophy'

Unless you're familiar with the meaning of the term 'operational philosophy', you may be tempted to dismiss it as just another example of pretentious jargon. Don't! It actually refers to a practice that's of major importance to us as modellers and should be factored in at the design stage of every project. Why? Well, because getting your operational philosophy right is key to the smooth running of a model at the pondside, and helps ensure both reliable, consistent performance and ease of operation. What follows, then, is an explanation of how to identify, implement and use operational philosophy to get the best out of your steam models.

What does the term actually mean?

Operational philosophy identifies the way in which we want to run a model, from a complete and integrated point of view.

With an electric-powered model it's always pretty straightforward: we put a fully charged battery in a boat and run it round the pond until the battery is almost but never completely flat – so, a fairly straightforward operational philosophy, i.e., "Take the boat out of the water before the battery dies".

We can achieve this by, for example, fitting a battery that has the capacity to last for the amount of time we want it to on the water by making sure it's charged up enough for that duration. All very basic stuff, but an 'operational philosophy' nevertheless.

With a steam model, though, there are far more factors to consider, all of which have pre-determined time restrictions attached to them – i.e., the amount of boiler fuel, the amount of water in the boiler, the capacity of the separator and the amount of

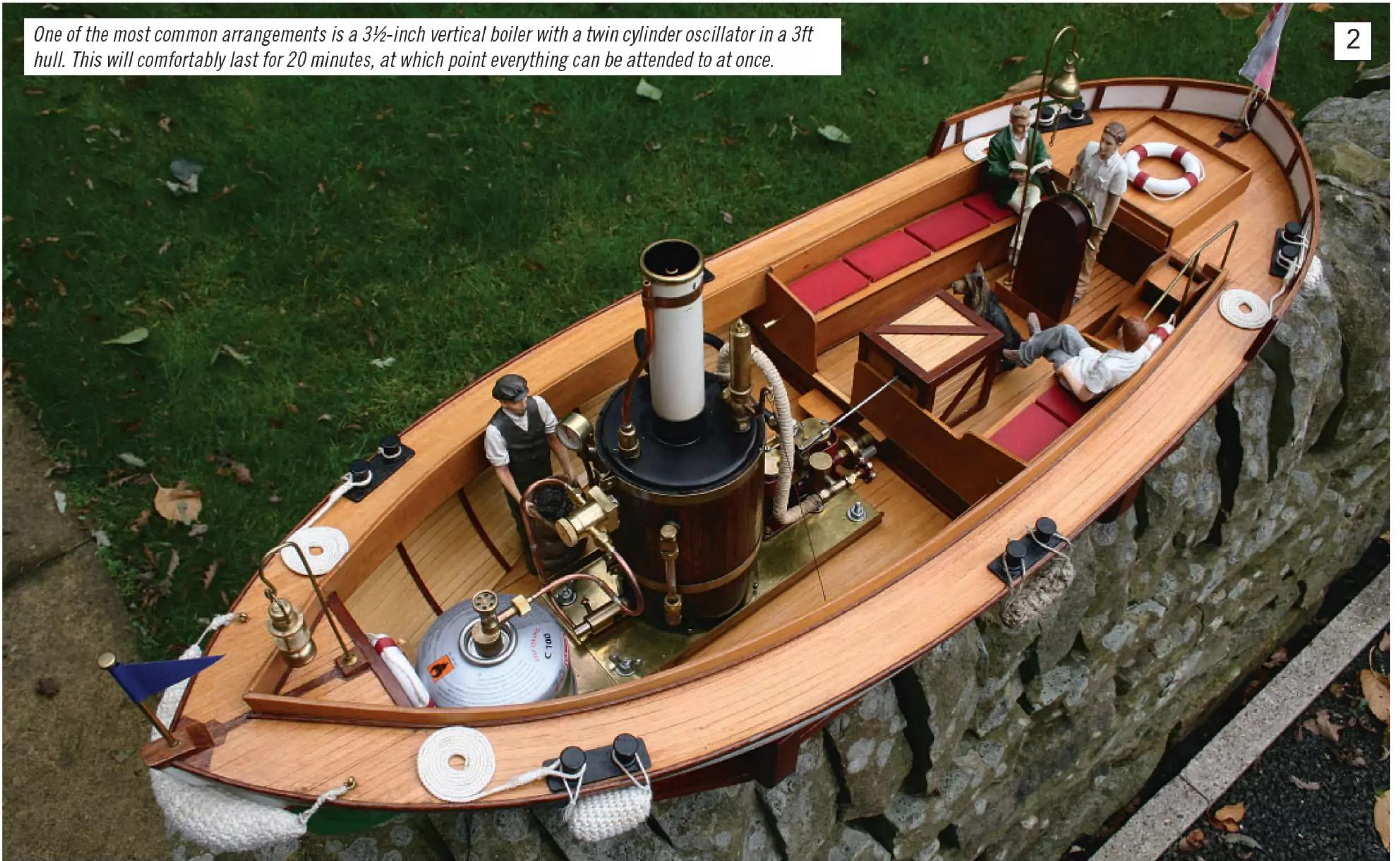
"Getting your operational philosophy right is key to the smooth running of a model at the pondside, and helps ensure both reliable, consistent performance and ease of operation"



Initial feasibility studies should highlight what's going to work well with what. It will soon become obvious if one item isn't going to fit in with your intended philosophy. Here the boiler was never going to last long enough to match the other items.

One of the most common arrangements is a 3½-inch vertical boiler with a twin cylinder oscillator in a 3ft hull. This will comfortably last for 20 minutes, at which point everything can be attended to at once.

2



oil and rate of use in the lubricator. All determine when a boat must be retrieved so components can be either filled or emptied as required. What we therefore ideally want to achieve is an arrangement of plant that, by design, has those requirements all come at the same time, meaning we'll only have to take the model out of the water once, rather than every five or ten minutes to attend to things individually. As an example, when initially playing around with layout considerations for a particular project and looking for around 20 minutes on the water, I found I had a gas tank and a separator that would last that long, but a boiler, when used with the twin cylinder oscillator, that would probably only last about half that time. This, therefore, meant I needed either a feed system or a bigger boiler (see **Photo 1**).

Let's first have a look, then, at what affects the timing of the individual items.

The individual items that require attention

*Boiler feed water

As covered in the April 2024 instalment of Boiler Room, the use of differing methods/equipment affect when we need to attend to the boiler



A standard Hemmens lubricator unit for a twin cylinder oscillator, complete with drain connection but no control.

feed water. We could simply rely on a single boiler fill and retrieving the model just before we lose sight of the water in the bottom of the sight glass, which could be anywhere from 15 minutes in a small boiler to maybe 25 in a larger one. Alternatively, we could opt for any one of the feed system arrangements available to us, in which case the model might be able to carry enough feed water to last 45 to 60 minutes before the feed tank needs topping up. So, a fairly wide range of times in total there. There is, of course, the complexity of the feed arrangement and initial cost to take into consideration, and the possibility that limited space in the model won't allow for a feed system. A typical 3 1/2-inch boiler in a 3ft long model should give you somewhere in the



At the other end of the scale, a much higher capacity and a needle valve to control oil flow will give you a lubricator that could easily last up to an hour.

region of 20 to 25 minutes of water (see **Photo 2**).

*Lubricating oil

There's probably more flexibility here, as it's not the end of the world if the oil in the lubricator has been all used up but the model runs for another few minutes relying on the already oiled surfaces. You can fit larger-sized and more sophisticated lubricators that allow you to control the amount of oil being used, both of which affect the overall duration. A standard displacement lubricator (see **Photo 3**) should give you around 15 to 20 minutes, whereas one of larger capacity will obviously give you more, and possibly up to an hour when using a needle valve to control the oil flow (see **Photo 4**).



A typical horizontal type separator. If the exhaust steam remains fairly dry and the separator is mainly collecting oil, this unit could last well in excess of the 20 minutes.

*Separator capacity

This is also an important consideration and frequently one not given the attention it deserves. If you allow the separator tank to become full, then you'll get a mixture of hot water and used oil sprayed out all over your pride and joy from the steam exhaust outlet; this is frequently at the top of the funnel so ensures you'll get a nice even covering of this muck all over the model! Being steam oil it is particularly sticky and so very difficult to remove from every little nook and cranny afterwards. Fitting too small a tank will limit your duration, but it will be a compromise between available space and time on the water. A fairly typical size unit should give you around 20 minutes, although this depends on the boiler it's connected to (see **Photo 5**).

*Fuel

This is probably the biggest consideration of all, for several reasons. The quantity of fuel can always be varied, whether it's liquid or gas, and we can vary the size of the tank according to the duration we want, but with some models we also have to factor in the rule requirement



A mechanical attenuator valve can greatly extend the duration of your gas, as it averts the need to keep going at full speed to prevent the safety valve lifting. Bear in mind you don't fall foul of the requirement that the gas must be consumed before the available feed water in certain models.

that fuel should not outlast water supply. We may also have such devices as an attenuator valve (see **Photo 6**) or an electronic gas regulating valve to prevent wasting fuel and improve the duration. Again, space available in the model can play a part, as can, when using liquified gas, whether we want to use a refillable gas tank or whether we prefer to use disposable tanks (see **Photo 7**). If we go for disposables, the smallest generally available is a 100g tank, which is a significant size and requires accommodating in the model, as well as disguising if we're talking about an open hull model.

Let's now put it all together

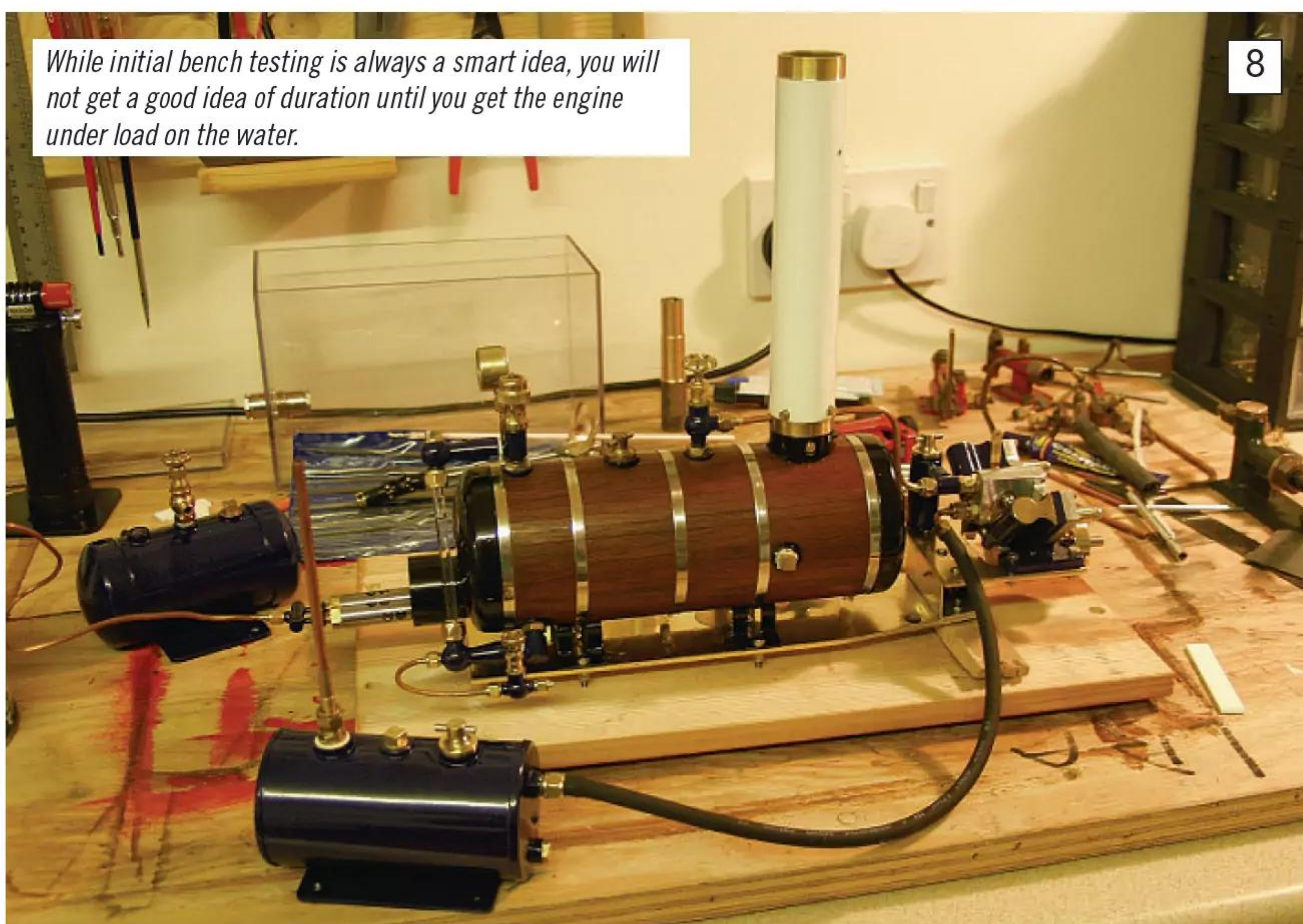
Having identified the four main areas of consideration, we now need to decide just how we want them all to work together. Thinking very basically, there is little point in having a fully automated feed system with the additional controllers, batteries, level sensors, valves and feed tank to last for 40 minutes on the water if the model has to be taken out anyway



Disposable or refillable gas tanks will always be a quandary. There are advantages and disadvantages with both.

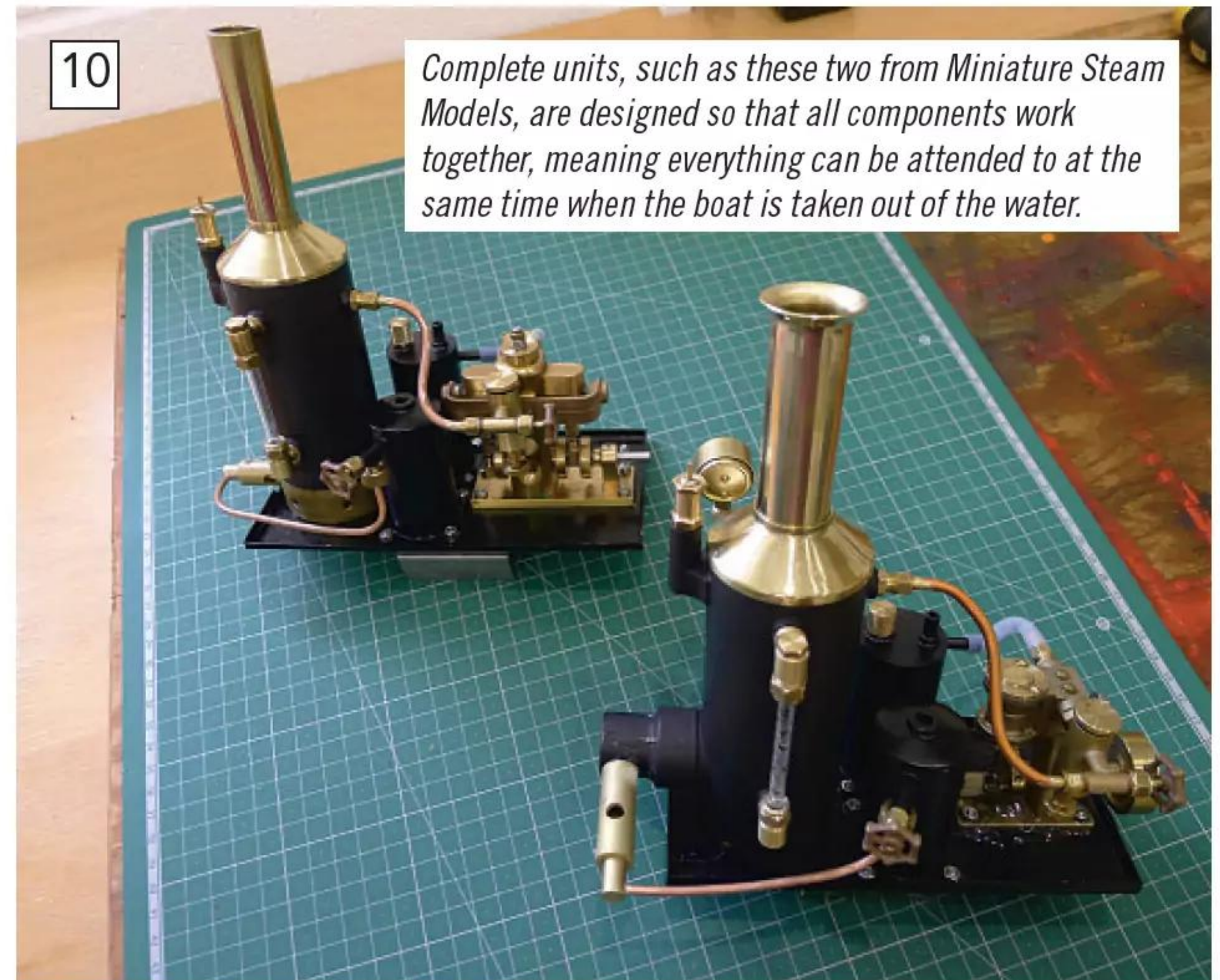
to empty the separator tank after 20 minutes of running. There is equally no point in having a sophisticated gas management system with its additional valves, batteries and sensors that then means the model will fall foul of the rule that water must outlast the gas! The foundation stone for any operational philosophy is to decide the length of time you're happy a model will be on the water for. You may think 20 minutes is enough, you may want it out there for half an hour, or you may want to push the duration as far as your hull capacity will allow and try to keep the model running for an hour. Whatever your preference, determining that time then gives you guidance for all the individual aspects of the plant.

As a comparison let's start by considering a model that we've decided we want to keep on the water for around 20 minutes. During the design stage you want to create a plant that will be able to meet the requirement of the 20 minutes from all the aspects that we've looked at. One part of the challenge that we're now going to come across is just how long things are going to last under normal operating conditions. Bearing in mind this may well be quite different to the duration you'll experience when running the plant on the workbench (see **Photo 8**), I recommend the model is subjected to a series of test outings with the many components temporarily connected together. These 'Sea Trials' will enable you to verify that the boiler water will last for 20 minutes without the need for a feed system, that the separator tank will not fill up with condensate in 20 minutes, that the gas tank will still have some gas in it after 20 minutes, and that the lubricator has enough oil in it to last the 20 minutes (see **Photo 9**). Once you've completed a couple of trial runs and everything works as anticipated, the performance is where you want it to be, and taking the model out of the water after 20 minutes allows you to service everything that needs doing in one go, then you're most of the way there in identifying the components you need in your plant. Remember that a plant





9
Never underestimate the value of sea trials. Best done without the decks fitted, this is the best chance you are going to get to see if everything works in harmony and is easy and convenient to operate.



10
Complete units, such as these two from Miniature Steam Models, are designed so that all components work together, meaning everything can be attended to at the same time when the boat is taken out of the water.

“Having identified the four main areas of consideration, we now need to decide just how we want them all to work together”

made up of individual components purchased separately might need a bit of tweaking at this point, i.e., the separator tank might be too small, the fuel tank might be too small, etc. Considering a plant that includes the separator tank, the gas tank, the engine and the boiler all on one common base, such as the Miniature Steam Models units (see **Photo 10**) or the Cheddar twin Puffin plant (see **Photo 11**), will make life a lot easier, as the components are already designed to work in harmony and require attention at around the same time. This is why I would always recommend an all-in-one plant for a beginner.

So, let's look at the other end of the scale and consider an operating philosophy where you want to use every bit of space in a large hull and for the model to be on the water for as long as possible, with a target of an hour. Every aspect of the four items we identified above now need to be looked at in a different way but, yet again, they all need to be looked at in conjunction with each other. To start with, the fuel will almost certainly have to be gas, and you will most probably need to use disposable gas tanks. If you want to use a refillable tank, then the tank will be above the 250gm size limit and require periodic pressure testing, as well as being quite heavy. To make the most of the fuel, a gas management system, with its associated control system, valves, batteries and sensors, will almost certainly be required. The gas cooling effect will need to be taken into consideration, so some form of waste heat warming will have to be included

to try to prevent your gas tank from over cooling. This could be a heat shunt, or a heating coil supplied from either hot water or waste steam.

Boiler feed will have to be from a separate feed tank with some sort of feed system, either manual or electronic. Don't forget with some models the water has to outlast the gas, so you need a suitable size feed water tank to give you that reserve. If you go for automatic then you need to include the sensor, control unit, servo and battery on top of the additional pipework and valves.

The engine lubricator will need to be of a large enough capacity to do the job for an hour and a metered supply from a controllable oil feed lubricator would probably be an advantage.

Finally, you want a separator tank that will hold enough condensate to last an hour of operation. This can be assisted by controlling the lube oil supply and keeping the exhaust pipe lagged to reduce the amount of exhaust steam that is condensed, but identifying the duration of the separator is highly unlikely until suitable trials have taken place. Just bear in mind all that water you have supplied from the boiler and the feed tank has to go somewhere, which is either into the atmosphere as exhaust steam or into the separator tank. The idea of the separator tank is mainly to remove the oil and allow the exhaust steam to vent in a cleaner condition, but invariably you will collect condensate as well. Allowing for all this will invariably give you a complicated plant, but one designed to operate in harmony so as to minimize downtime and



11
Even this old Cheddar twin engine plant is designed to operate as a complete unit. Each engine has its own lubricator as well as its own separator, and the boiler has its dedicated gas tank also mounted on the base.



If you have a big open hull, you can take advantage of this to push the boundaries a little as far as endurance is concerned. This plant has an automated boiler water feed system, an automatic gas control valve and a larger than normal lubricator.



A disposable gas tank makes for a quick and easy tank change.



Using a syringe, rather than waiting for gravity to act on the thick steam oil, always speeds up filling the lubricator.



Again, a syringe with a fine tube fitted makes oiling the engine quick and easy, as well as minimizing mess.



Using a syringe with a suitably large nozzle fitted also makes the separator tank quick and easy to attend to.

ensure reliable and convenient running for possibly 45 minutes (see **Photo 12**).

Conclusions

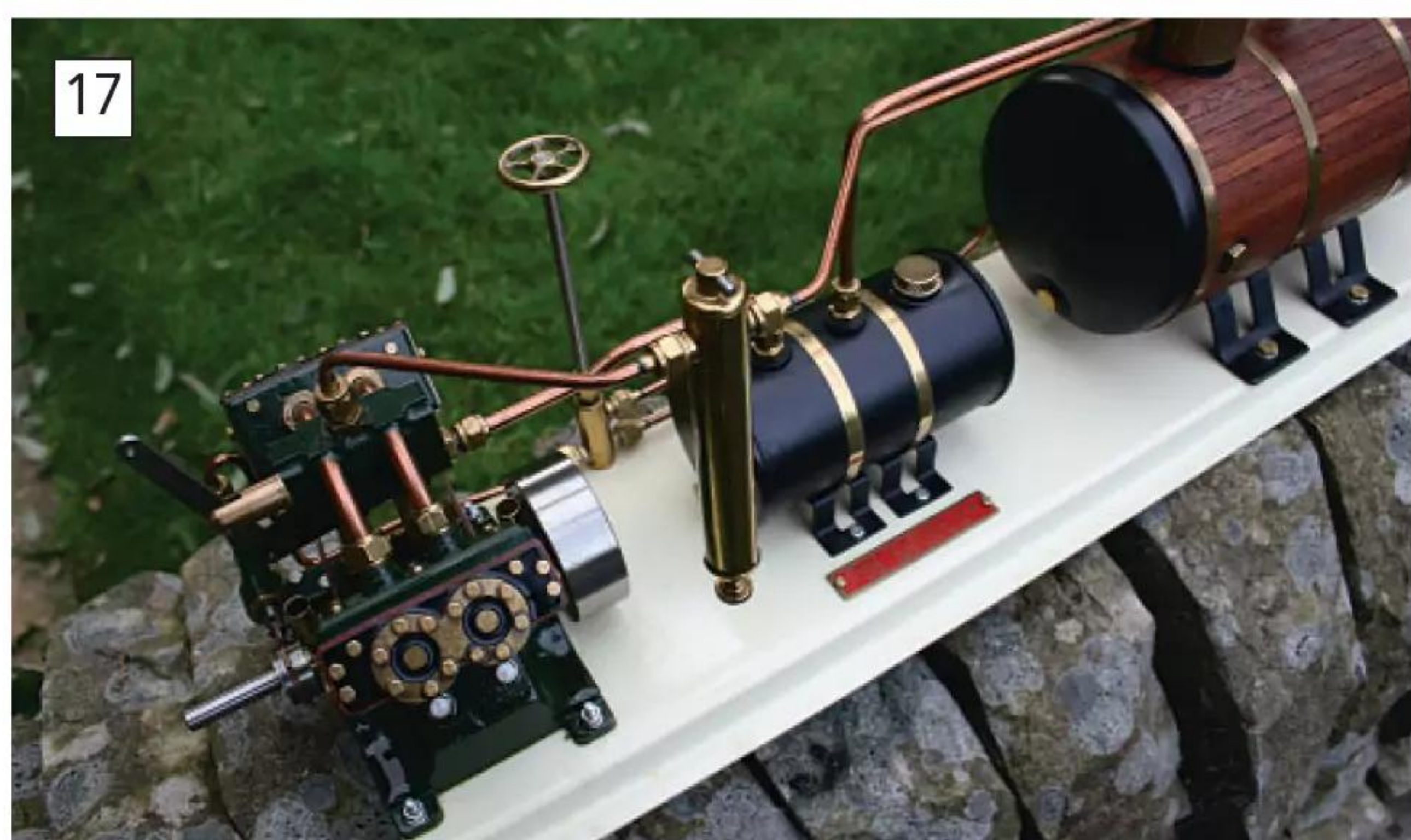
Looking at these two extremes it's easy to see that the operating philosophy dictates all aspects of our model design. It doesn't really matter whether you want 20 minutes on the water or 60 minutes, the real issue is that all aspects of the plant should be of a capacity to match that requirement. That way you can take your model out of the water, attend to all requirements in one go, and get it back out there again. If you don't take this approach

"If you don't take this approach to your design and operation, then running the model will become a laborious chore and you will get fed up with it"

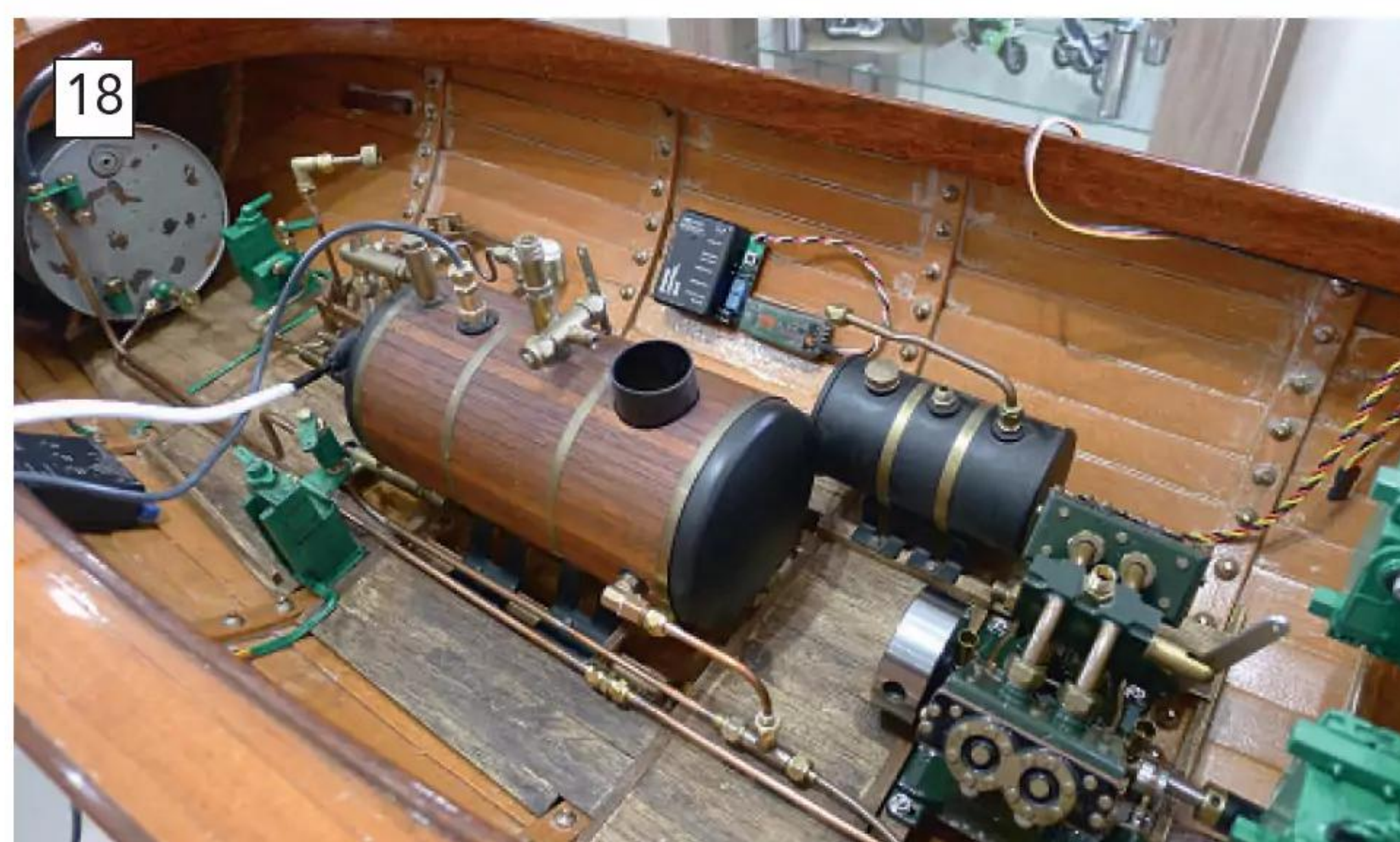
to your design and operation, then running the model will become a laborious chore and you will get fed up with it. I know model steamboat operators at my own club who generally work to around 20 minutes with a relatively small model, but can have the model out, turned around and back in the water again in a matter of minutes. During that time, they can

change the gas tank (see **Photo 13**), top up the lubricator, (see **Photo 14**), oil the engine (see **Photo 15**), empty the separator (see **Photo 16**), and top up the boiler water. I've even been known to comment on how long the model has been on the water, only to be rebuffed by being told it has been out and turned around twice so far!

As a final thought, it's always worth considering starting with a complete plant, such as the Hemmens Caton 'V' four plant (see **Photo 17**), splitting it into its individual components and then arranging these as you want in your model (see **Photo 18**). This way, you can be sure the items are all designed to work together. ●



Starting with a complete manufactured plant on a base gives you a set of components designed to work together. This Hemmens Caton plant features everything, apart from the gas tank, on the supplied base.

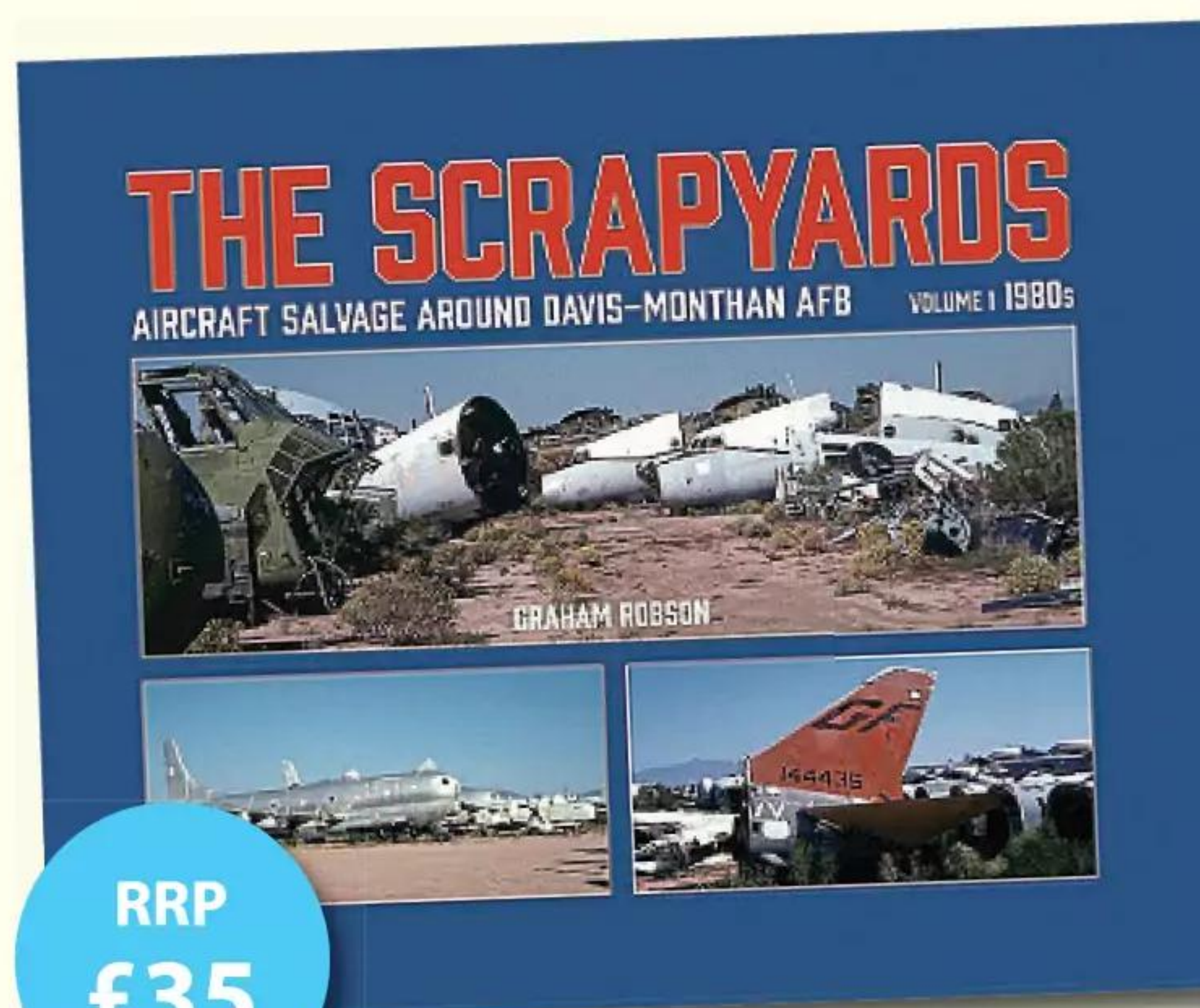


If you split the components of a complete manufactured plant up and mount them individually in your model you should have a reasonable degree of confidence that they're going to work well together.

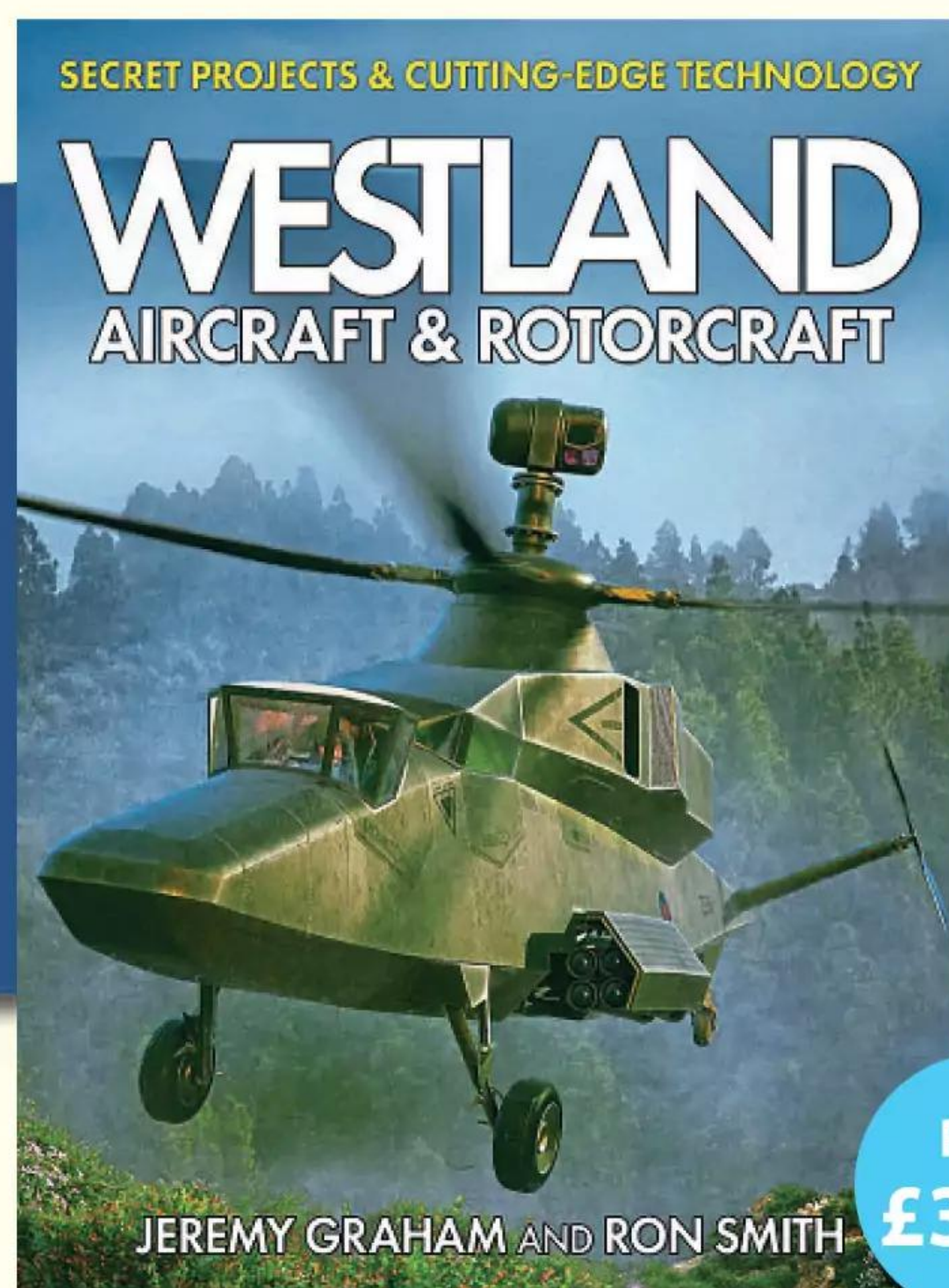
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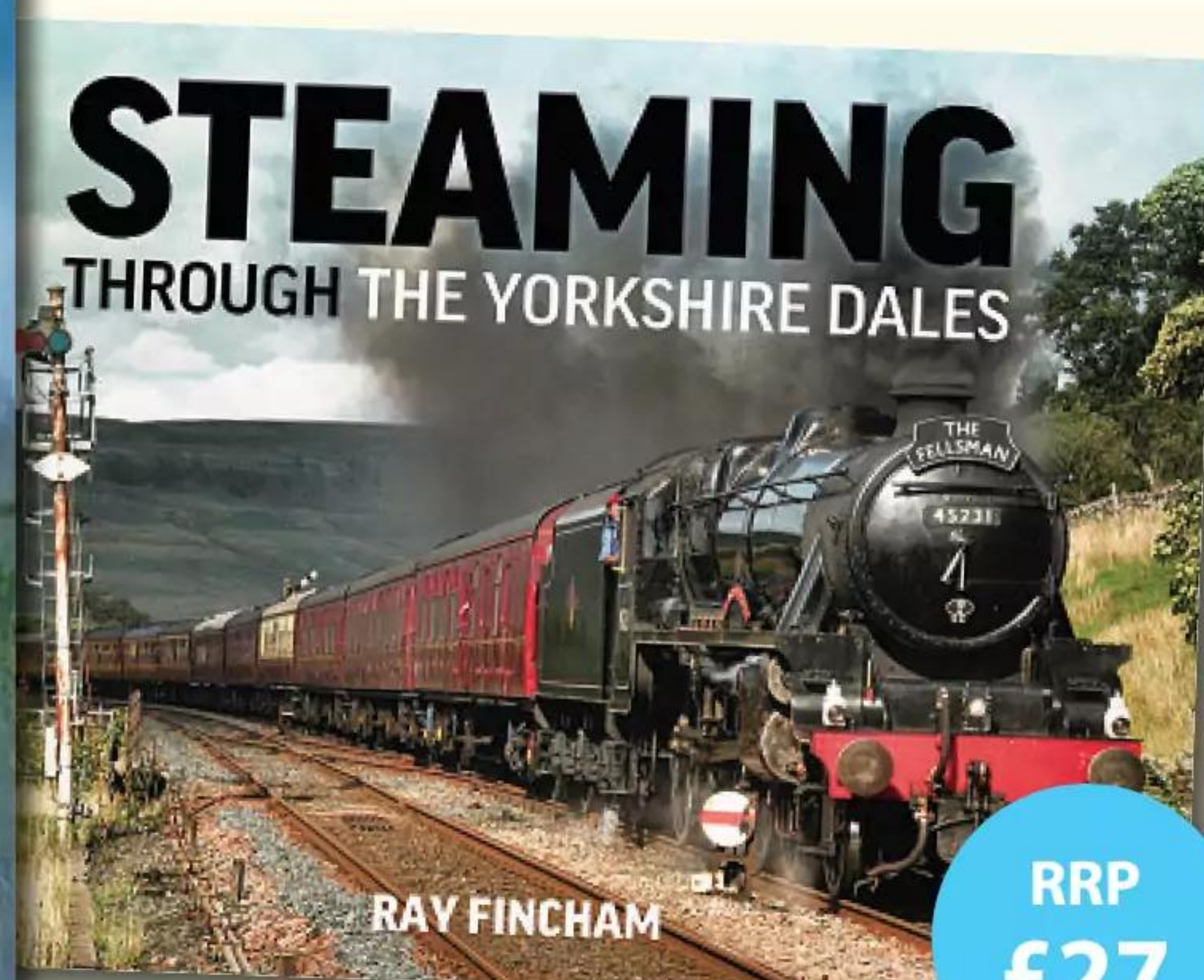
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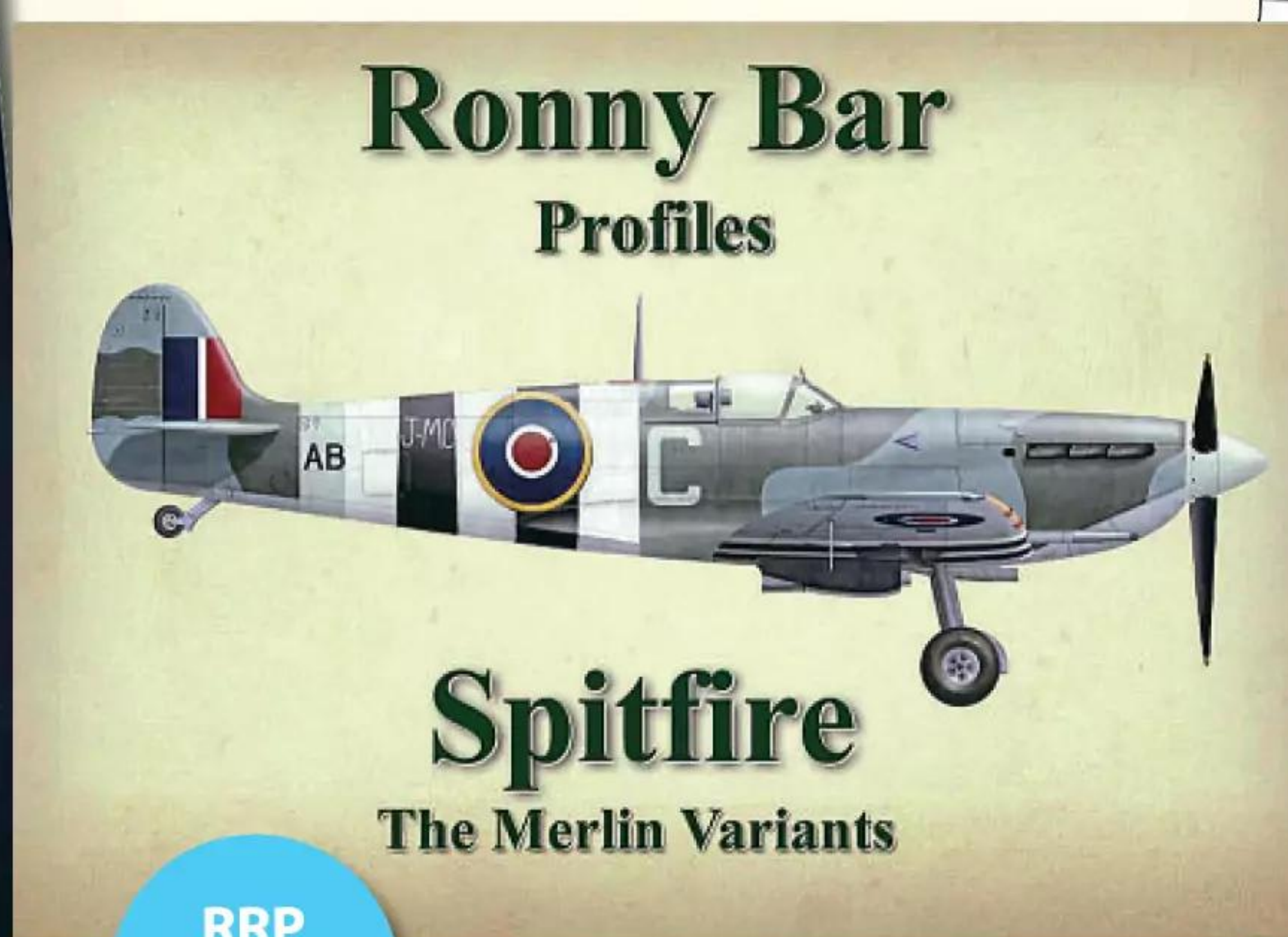
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Your Models

Whether you're highly skilled and experienced or completely new to the hobby, you're definitely invited to this launch party! So please keep the contributions coming by emailing your stories and photos to editor@modelboats.co.uk

Swedish Pilot Boat

I'm sure there must be times when you publish a free plan and wonder whether anybody out there actually builds it! So, to reassure you that your efforts are not in vain, here's what I did with your April 2016 Pilot Boat project.

I'm very much an intermittent boat modeller; a project has to engage my enthusiasm. Your Pilot Boat plan immediately appealed to me as one to add to the 'to-do' pile. Then along came the Covid lockdown and that seemed like the ideal opportunity to get on with it.

It was an extremely satisfying project, being essentially a scratch build as the published plan was really just a reworking of the shipbuilder's as-designed GA, and the huge online collection of images of the prototype made it possible to create the as-built to a pleasing level of detail.

I started by working up the body plan to 1:12 scale - a good scale for this type of boat. The hull is conventional ply skins on frames, the built-in spray rails at the bow making for an interesting challenge. Coating epoxy provided a good base for building up the paintwork - nothing fancy, just spray cans and lots of rubbing down.

The cabin structure is made from styrene sheet on a Foamalux base, which replicates welded aluminium quite nicely. Window frames are nickel-silver model railway rail culled from the local model shop's scrap bin. It's the perfect material for the job; easy to work with and tweak into a good fit and achieves a snug snap fit on both the glazing and the cabin cut-outs. The scuppers around the hull were created using a single-hole punch in styrene sheet. The green non-slip deck coating is actually a textured paint from Halfords - one wonders what a car owner would want it for, but it's perfect for this application.

Probably the most interesting details were the various handrails and the gantry; lots of brass wire from Ron Dean, careful fixturing and lots of



silver solder. Almost seemed a shame to have to paint them!

Internally, I used a brushless motor setup to achieve something like scale performance. The only detail that has so far eluded me is the windscreen wipers, which are tricky little parallel-motion assemblies that I have yet to figure out a way of reproducing convincingly.

Anyway, I hope you find the above of interest; it certainly enhanced my life!

KELVIN DAVIS
EMAIL

It's always rewarding, both for us and the plan designers, to see resulting builds, so thank you so much, Kelvin. You've done an amazing job. Ed.



Recycled materials paddler

I thought I would share these pictures of a model boat my dad has built from scratch using entirely recycled materials. This was his first ever build, and he constructed the boat from card and over 1,500 lollipop sticks cut to size. Curtain pole was used for the funnel, cotton reels for the winch gear and sock

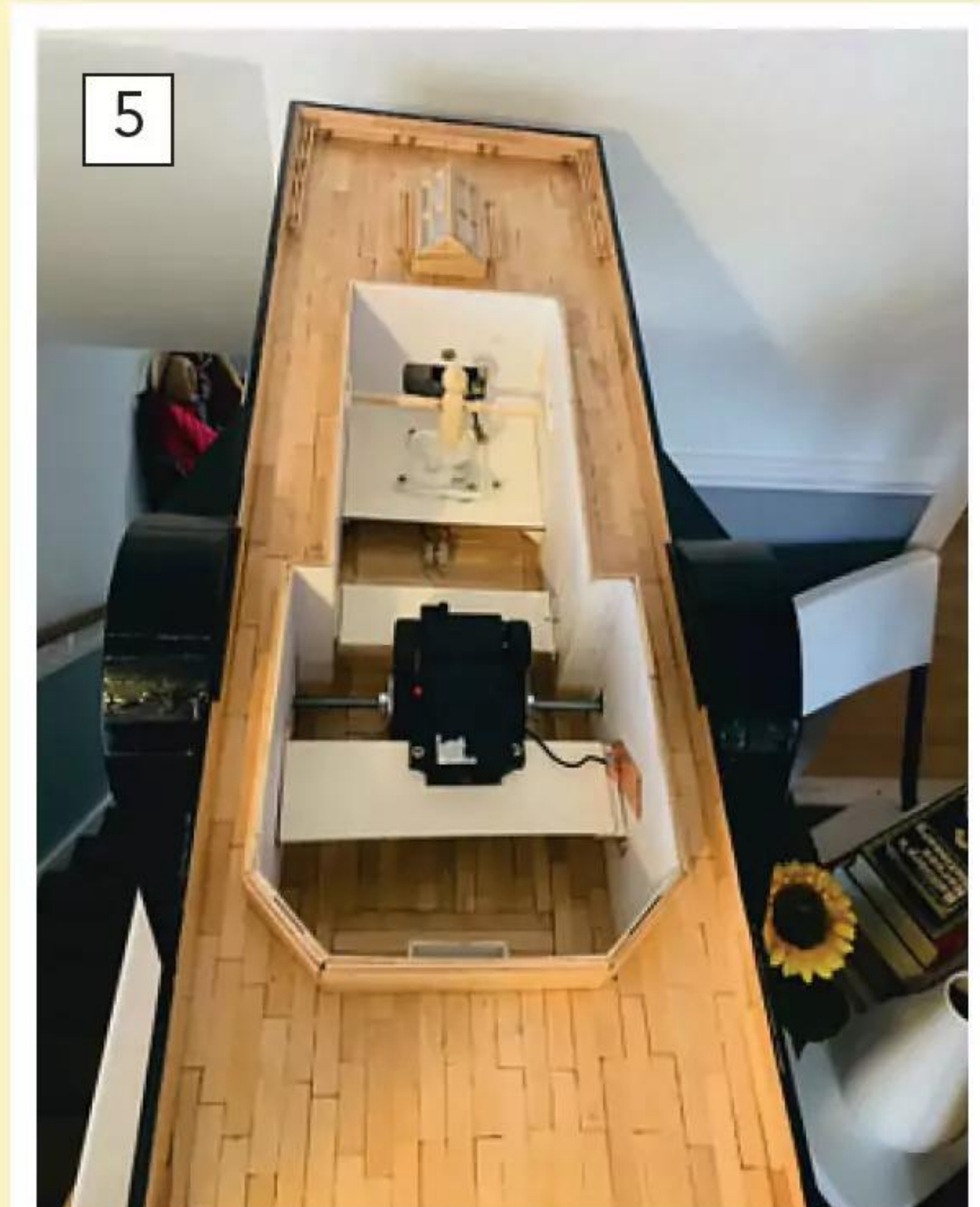
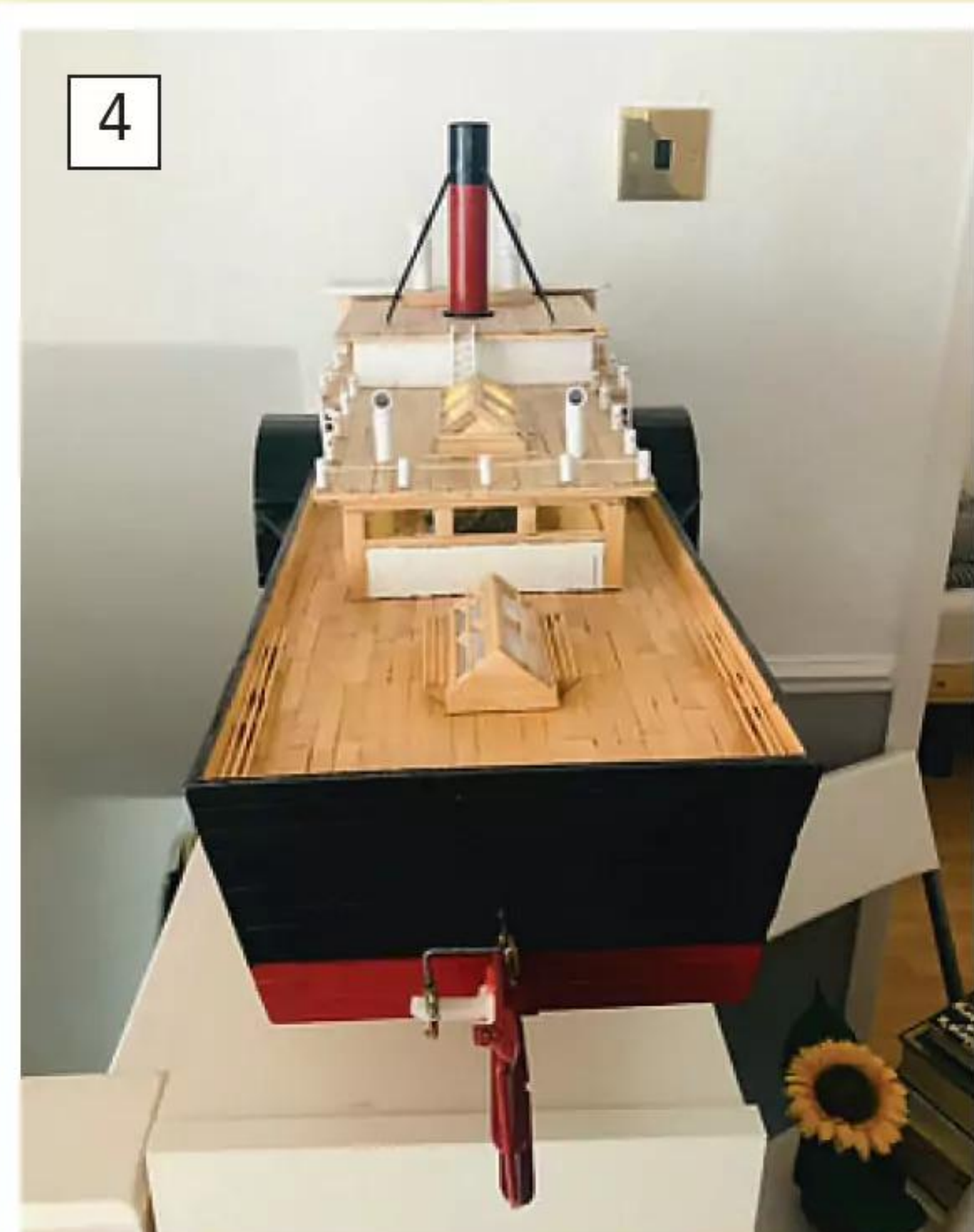
packaging for the anchors, while motor that drives the paddles came from a remote-control toy car and the rudder motor and gears from an air freshener!

The boat is just under a metre in length and took many hours to complete.

It floats, although hasn't had its maiden voyage yet!

DEREK SIDWAY EMAIL

I am full of admiration for those who can make something out of nothing, and in this case, what a something! Thanks so much for sharing these pics, Derek, and please pass my congratulations on to your dad. Ed.



Built entirely from recycled materials, how impressive is this splendid paddleboat!

Anna, the Regina Jagt and the St Roch

One Christmas my wife presented me with a model boat kit for the *Halifax*. I quickly set about assembling the numerous wooden parts but soon realised that the build wasn't going well. Lack of experience, unsuitable tools and the wrong glue meant that within a few days disaster was imminent. I therefore carefully packed away the mess that had resulted from my efforts, intending to return to the build at some point in the future.

30 years on and I received another kit for Christmas. In complete contrast, I took my time with this inexpensive 30cm fishing boat model, and even made some modifications. I am quite pleased with the result and named her *Anna* after my wife.

I've since gone on to build two more models, the *Regina* and the *St Roch*, both from the Billing Boats' range of kits, and I now have a tugboat, the *Ulysses*, from OcCre in production.

My original kit of the *Halifax*? You've guessed it; it's still unfinished in the cupboard – but one day...

ROB LUCAS
EMAIL

Absolutely superb work, Rob. Interesting that one of your choices was the St Roch, as she set out on a secret mission from Vancouver in 1940 and due to heavy ice in the Northwest passage spent two winters frozen in Arctic waters before finally reaching Halifax in October 1942. Coincidence, or the universe trying to tell you something? No pressure, but let's just say I'll be holding space for both the Ulysses and the Halifax! Ed



Rob Lucas's charming little fishing boat, named for his wife, Anna.



Constructed from a Billing Boats' kit, Rob's beautiful 1:30 scale Danish sloop, the Regina Jagt.



The St Roch Arctic Patrol Boat, also built from a Billing Boats kit, this time in 1:72, by Rob.

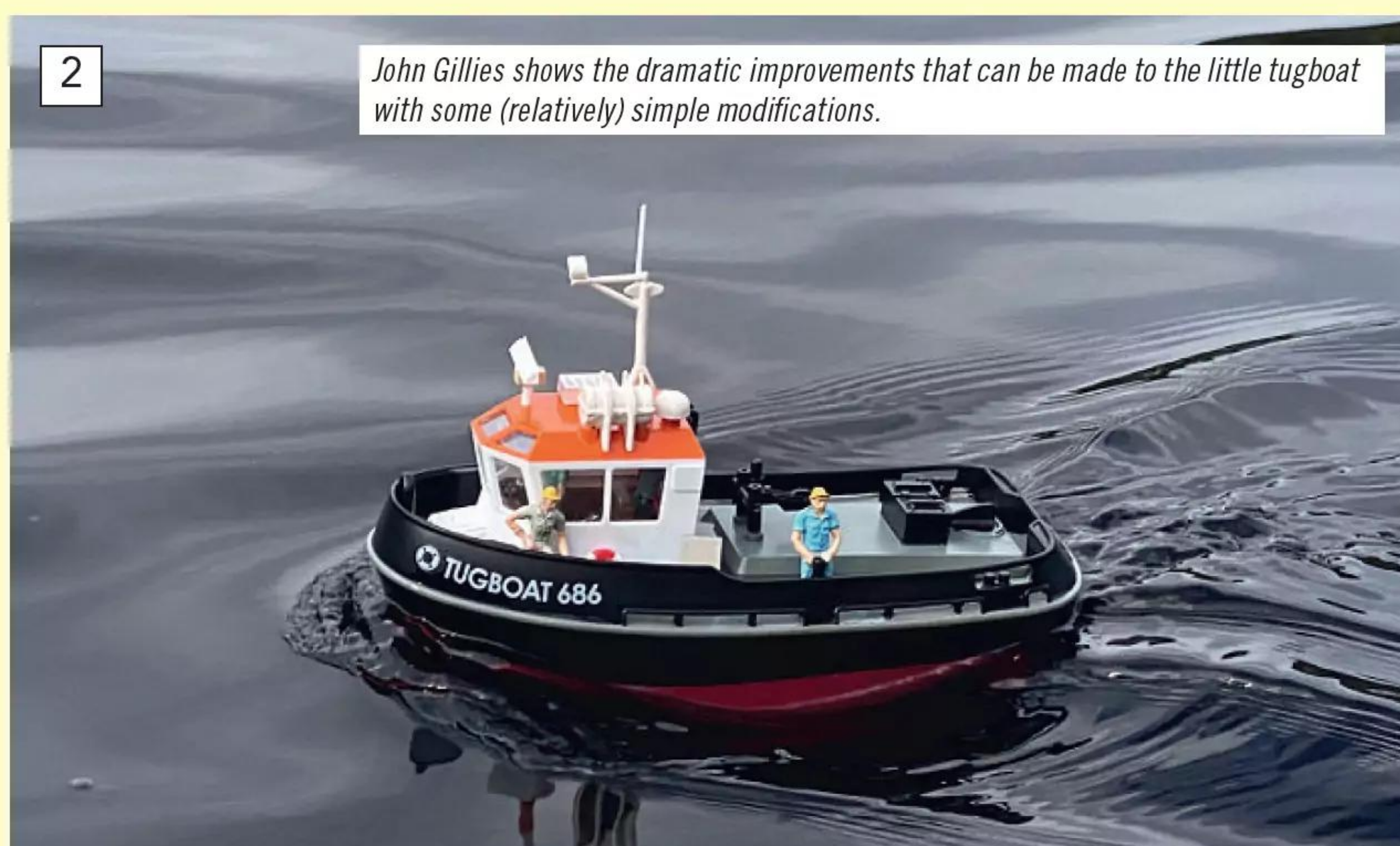
Tugboat triumph

I really enjoyed the article in August's edition on the Heng Long Tugboat 686.

I bought one a couple of months ago to allow my grandsons to begin



Although a great little bargain in terms of Ready-to-Run models, Heng Long's Tugboat 686 does look somewhat toy-like in its 'straight out of the box' guise.



John Gillies shows the dramatic improvements that can be made to the little tugboat with some (relatively) simple modifications.

enjoying R/C boating. I completely agree with Phil Parker's findings; she's a great little model with a lot of potential for modifications. Rushing to have her ready for the kids, I set about a few mods myself. I lowered the black hull to the waterline, and painted the wheelhouse inside and out, as well as around the deck, while

plastic from a strawberry tub was used to glaze the windows. I also detailed the life raft and, for a little more realism, added a radar scanner, radio antenna, small searchlight, and, finally, some figures left over from my Billing's *Calypso* makeover.

Considering how quickly all this was done, I think she's turned out really well.

JOHN GILLIES EMAIL

What an excellent job you've done on this little tugboat, John! The transformation is truly inspiring, I bet your grandsons are delighted with her. Ed.



ST-761

After appearing in the Your Models section as 'Work in Progress' back in the August 2022 edition of Model Boats, I am pleased to say that my US Army Tug ST-761 (ex-Ryhope) has now successfully completed her maiden voyage, having only taken 26 years to finally complete!

I'm currently building Aero-Naut's Fischkutter, Mowe 2, which I first spotted in the April 2022 edition of Model Boats, for my grandchildren. Hopefully, they won't have to wait quite so long!

Thanks for all the interesting and informative articles and content in the magazine

**REX DOWLMAN
(EX-RADIO OFFICER,
CUNARD-BROCKLEBANK
AND CP SHIPS)**

Super smart, Rex! However, while it's the end result that counts, something tells me Mowe 2 is going to be pushed to the top of your priority list whether you like it or not! So, I look forward to seeing her in the near future. Ed.



Finally finished and making her maiden voyage, Rex Dowlman's US Army Tug ST-671.

Cutty Sark masterpiece

I have just finished building Billing Boats' *Cutty Sark*, and while I customised this build to a slightly lower level than I did my model of *Victory*, I am pleased to report she is looking fantastic!

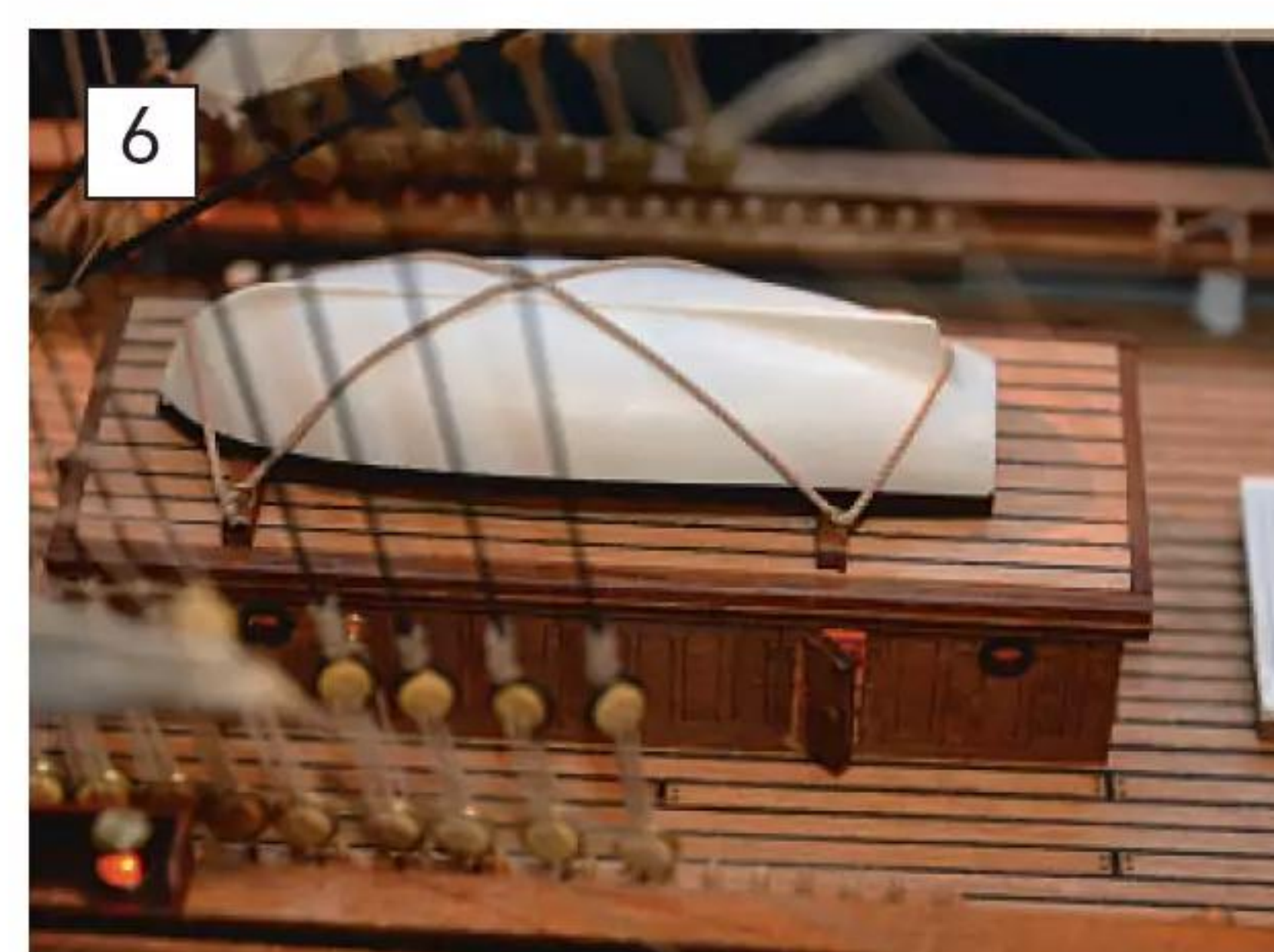
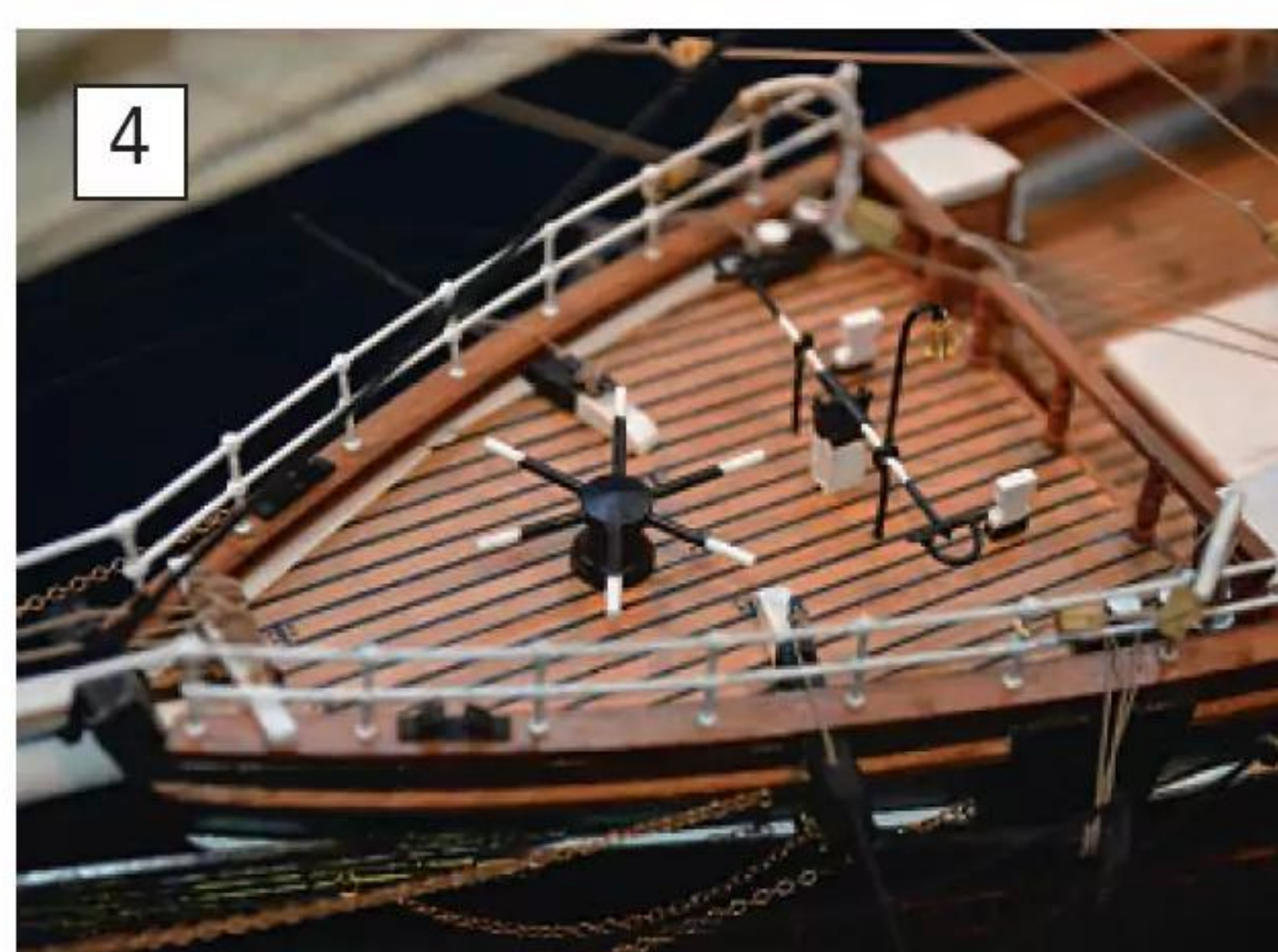
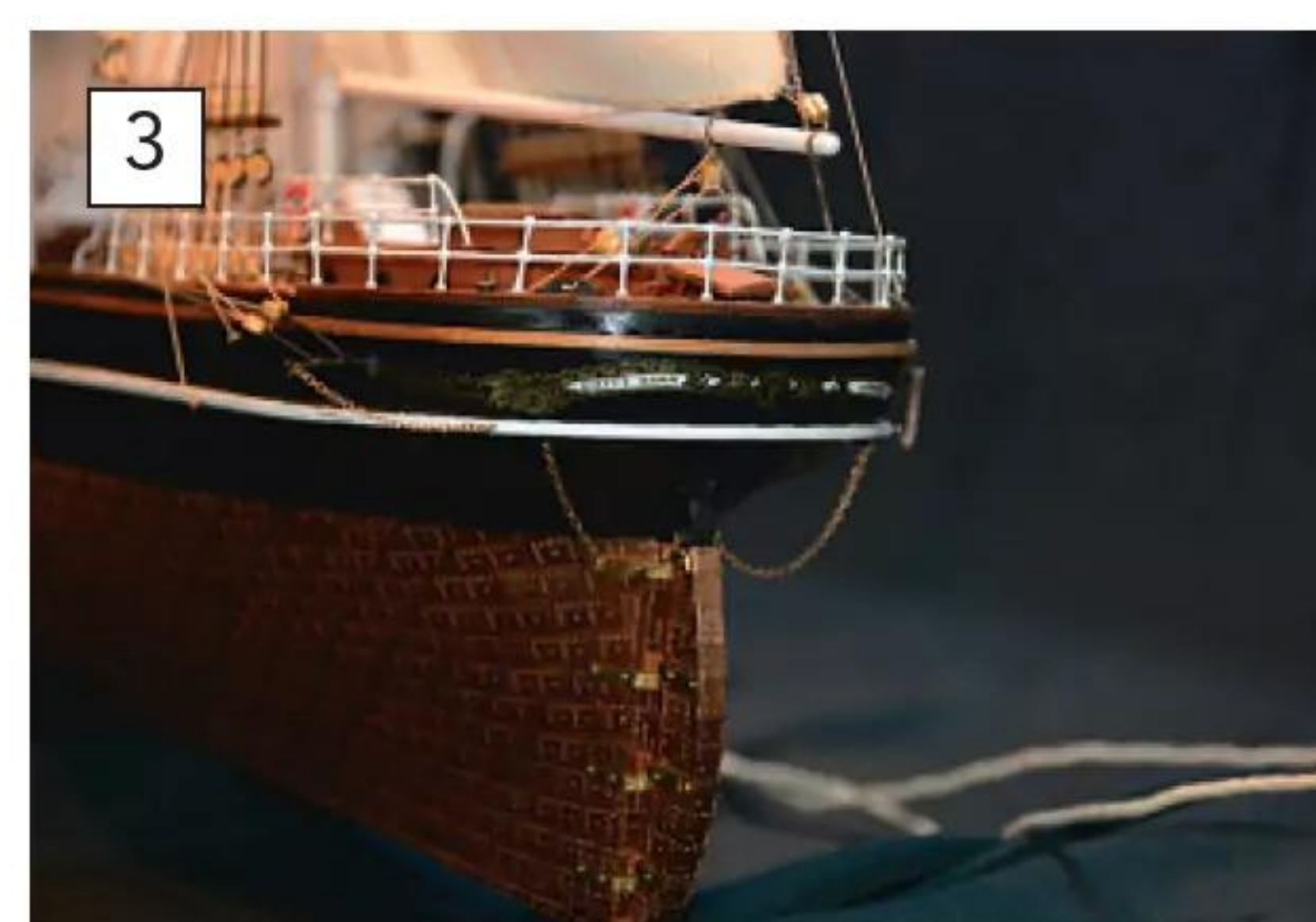
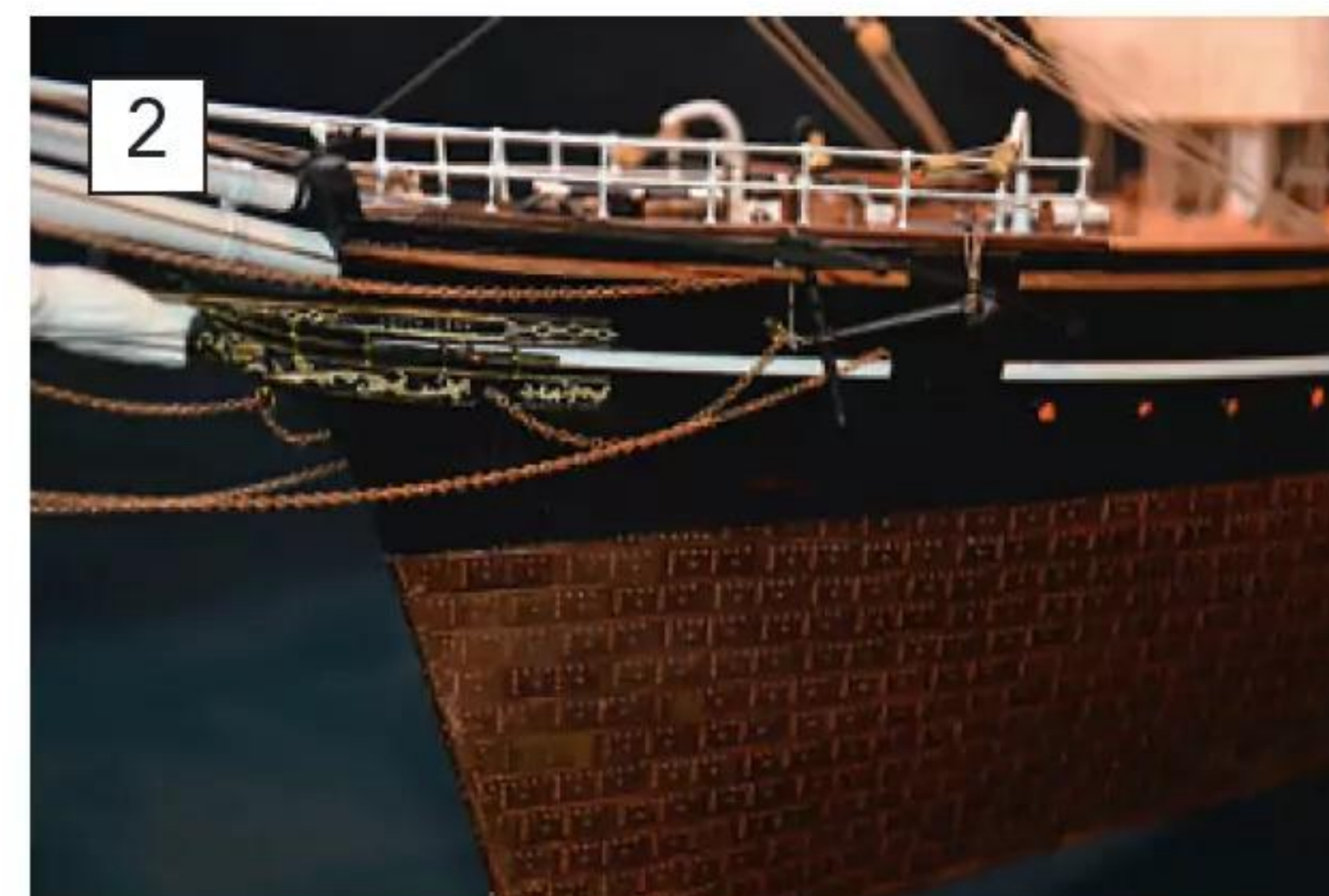
As with *Victory*, I've copper plated her hull, while in the interior I've made some modifications to the cabins, leaving the

doors open so you can see the yellow LED lights I've installed. I've also used three different colours of rope (black, dark brown and tan), using various sizes from 0.25mm right up to 1.4mm.

I was privileged to be the first person to fit and test the sails Billing Boats provide with this kit, and I have to say they are the best I've come across so far!

JOHN ALIPRANTIS EMAIL

Oh my goodness, John, I know you are a highly skilled professional modeller, but she's absolutely breathtaking! What a treat it is to be able to share these photos of your exquisite work. Many thanks for allowing me to do so. Ed.



Your Letters

Got views to air or information to share? Then we want to hear from you!

Letters can either be forwarded via email to editor@modelboats.co.uk or via post to **Readers' Letters, Mortons Media Group, Media Centre, Morton Way, Horncastle, Lincs LN9 6JR**

OUT AND ABOUT

Weymouth & Portland MBC Lifeboat Sail Day

The Weymouth and Portland Model Boat Club staged its Lifeboat Sail Day in June. This was to celebrate the RNLI's 200th year. In the past we have mounted our exhibition at The Lyme Regis Lifeboat site but, due to the proximity of our club gazebo relative to the lifeboat launching tractor, this year health and safety precautions did not allow this to take place. The decision was made to carry out our own 'mini' lifeboat day to compensate.

This took place at Mangerton Mill Lake, one of our three sailing venues. Club members were invited to bring along their model lifeboats where possible, or 'run what you brung' models. We had a very good attendance with many types of models all getting on the water at some point during the day. The

weather, which was bright and sunny in the main, was very kind to us, not following the forecast. We had one strong breeze gust, which sent most things 'all ahoo'. We were relieved to see many visits from the public, as our site is well off the beaten track. Volunteers from the Lyme Regis Lifeboat were on hand with their exhibit of merchandise, and they enjoyed themselves watching and listening to our antics during the day.

We had an enjoyable day, with nobody getting into difficulties and the rescue boat was not required at all. Some of the models are shown below.

I believe one of the highlights of the day occurred when one of our members put his two little Heng Long Tugboats on the water. These little craft took everyone's interest. We all 'had a go'. I know I was smitten and have since obtained one; perhaps we

might arrange steering competitions with these amazing little boats. One of our members pointed out: "Here we are with many models all costing £hundreds, and yet £40 gets all this fun!".

Tea, coffee and glorious cakes, provided by Jane, all went like the proverbial.

In total the proceedings for the day amounted to £250, which was donated to the Lifeboat Institution.

We hope our usual exhibit will be back at Lyme next year, but we also hope to arrange another of these days as well.

ROBIN SEARLE
WEYMOUTH & PORTLAND MBC



KCMBC Open Day 2024

On Sunday 30 June we hosted our annual open day when model boat clubs from all over the Southwest come and join us at our water in the grounds of Kenwith Castle Care Home. Clubs from as far apart as Hayle to Cardiff made the trip and, thankfully, we were blessed with good weather to reward them.

As usual there were many stunning models both on and off the water and no major incidents, apart from

one yacht that went aground but was soon rescued.

We would like to thank Sedgemoor MBC, Camborne Pond Hoppers, Millbrook Mariners, Falmouth MBC, Cardiff Marine Modellers, Exeter and District MBC, City of Plymouth MBC, Hayle MBC and, of course, our own members for making the day so memorable. A free lunch was available and also a tombola, so our thanks, too, to all the members who contributed both food and prizes.

Special thanks must also go to Kenwith Castle Care Home for their enthusiasm and help laying on such a special event.

More photographs and details of our club are available on our website kcmbsc.weebly.com

STEVE MURCH
KCMBC

So glad it all went so well and proved to be such an idyllic day, Steve. Lovely photos. Thanks for sharing. Ed.





Memories of *Mister Roberts*

The Navy seaplane tender, USS Keats Sound, built by Glynn Guest and featured in the

February and March 2024 issues of Model Boats reminded me of an old film from the early 1960s called *Mister Roberts*. I remember watching this during the summer holidays in the mid 1990s when I was at college, and it starred Henry Fonda (as Mr. Roberts) and Jack Lemmon (as Ensign Pulver), both members of a US Navy cargo ship in the Pacific during the World War II. Henry Fonda's character was trying to get reassigned to a warship, with James Cagney as the ship's captain, playing Captain Bligh type character.

There was also a sequel called *Ensign Pulver*, but I don't remember who played the part, only that I believe that Burl Ives replaced James Cagney as the captain.

Mister Roberts, however, was not the first film about ships I remember watching; that would have been Tom Clancy's *The Hunt for Red October*.

Most of what I learnt about ships and tying knots was passed down to me by my grandfather, who had been a merchant sailor during the war. My grandparents also took my brother and I to the Chatham dockyards, where we watched ropes being made; these ropes are now being used on the *Cutty Sark*. We also took a trip on the *Kingswear Castle* paddle ship when it came to Whitstable, and again when it was docked at Chatham.

Keep up the good work!

MARK MAYBANK
EMAIL

To be honest, I'd all but forgotten Mister Roberts, so thanks for bringing it to mind again as it was a really different take on battling 'the enemy' in the Pacific!

I am sure your grandparents are/would be thrilled to know you have so many fond memories from your childhood. I know I love it when my children say, "Remember when....". Ed



Mayflower mayday

I wonder if you can help me, as I urgently need some assistance with the rerigging a model of the *Mayflower*. I am based in Runcorn, Cheshire, but would be willing to travel to (within reason), or link up somewhere with, someone who'd be able to undertake this act of kindness.

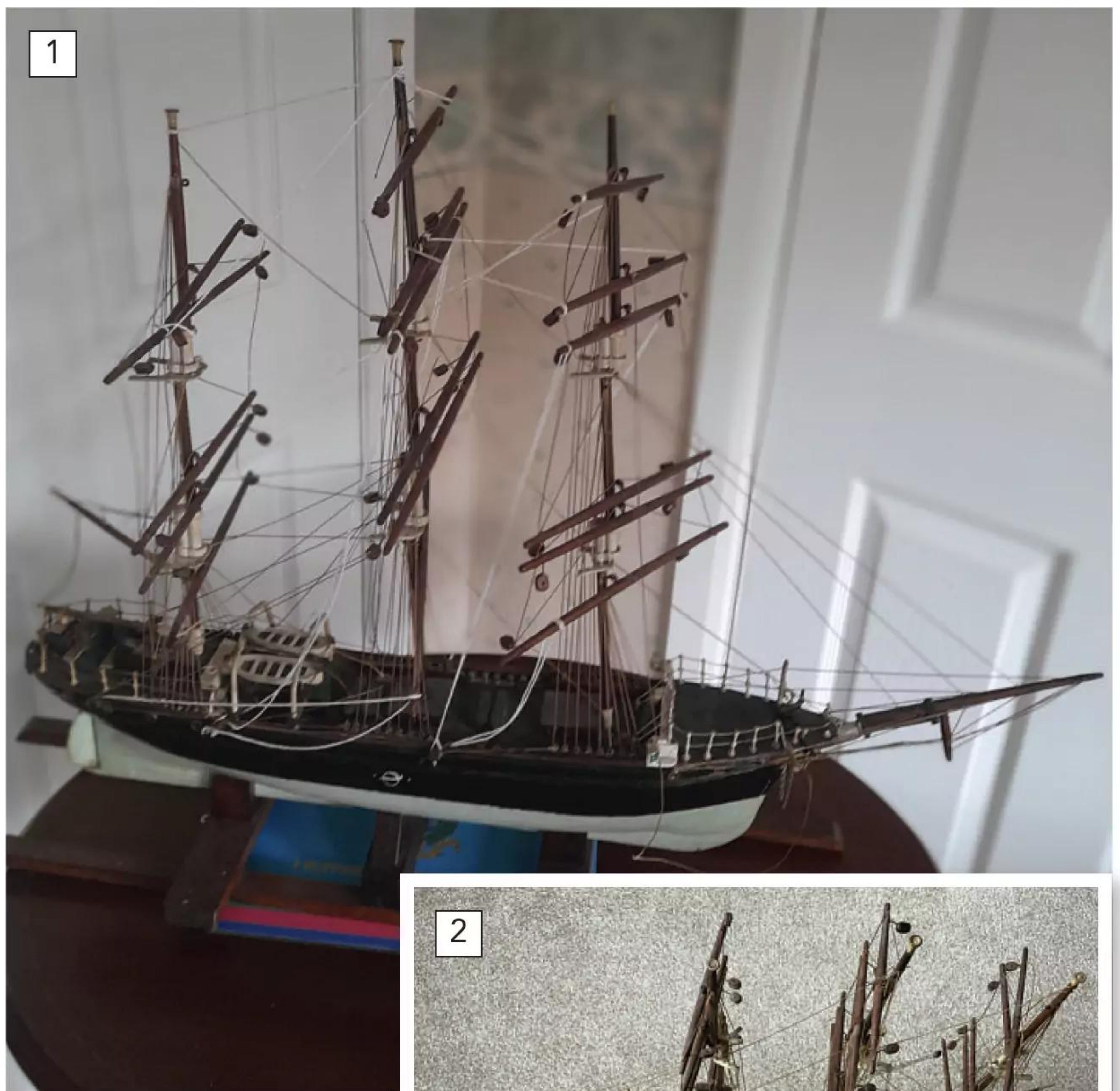
As you will see from my photo, a friend has already attempted the task, but sadly his efforts sadly resulted in failure. I am now 86 years of age and suffering with prostate and bone cancers, and one of my dearest wishes is to be able to leave this model, which has been in the family for well over 100 years, in a state of good repair.

It was originally owned by my late father-in-law Roberts Greig, who was the last of Runcorn's sailmakers. He knew and was able to name all the sails on any rigged ship.

I once asked what the difference between a boat and a ship was, and the answer I got was a boat is for coastal sailing, whereas a ship is for ocean sailing, hence the *Mayflower* is a model sailing ship.

EARLE RYAN
EMAIL

We have had success with similar appeals on these pages, Earle, so I am really hoping someone will step forward and help out here. Fingers crossed! Ed.



Would anyone like to volunteer to help Earle out and get his model of the *Mayflower* rerigged? If so, we'd love to hear from you.

R/C installation appreciation

I was in France on holiday when I read the July issue and found the letter/mini article by Dennis West on p.71. Thank you for publishing this - it was good to see someone picking up my design and taking on

the challenge of fitting R/C to such a tiny model. Please feel free to forward this email to Dennis and I would be very happy to hear from him if he'd like to get in touch. I have visited the Warminster model boat club a couple of times, but I don't think I've met Dennis yet.

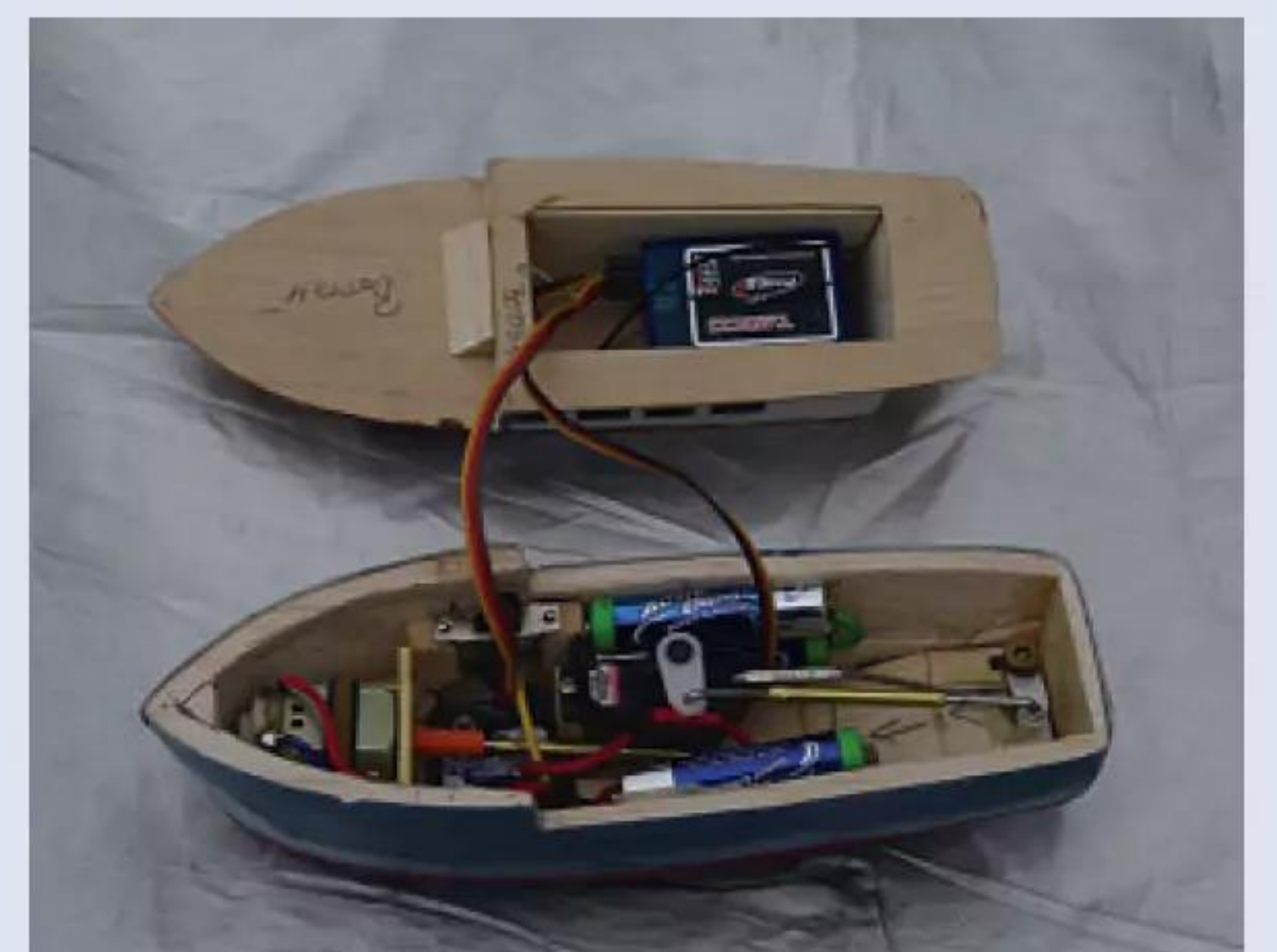
I look forward to the MB magazine coming through the door each month and I'm grateful to you and the team for keeping up the standard.

RICHARD TUNSTALL
WOODSPRING MODEL SAILING CLUB

It's been my pleasure to serve as go-between here, Richard – such great work on both your parts. Ed.



Details of how to build the delightful 'bathtub' boats designed by Richard Tunstall featured in our January 2024 issue.



Dennis West followed up with a helpful explanation of how it's possible to convert one of these little boats for R/C operation in the July 2024 issue the July issue.

The Golden Hinde

While visiting London four years ago I was surprised to see the *Golden Hinde*. The last time I'd seen this full-size replica ship had been 46 years beforehand as she was sailing down Milford Haven on her way to the New World. Back then I took her photograph as she passed from the stern of the vessel I happened to aboard, and if you look closely and you'll see the wash from her propeller (she clearly had an engine fitted). So, following the recent news stories in *Compass 360*, I thought it'd be nice to share this shot with fellow readers.

**COLIN
EMAIL**

How fortuitous you happened to have a camera to hand, Colin – for most of us, something so often not the case back in the 1970s. Great shot. Thanks for sharing. Ed.



The Golden Hinde as captured on camera by Colin back in the 1970s.

Look familiar?

Having just drawn Glynn's *Melite* plan for this issue, I thought you might like to see a photo I shot of a local boat that's pretty close to the model's design.

**GRAHAME CHAMBERS
GREECE**

Fabulous! Thanks so much, Grahame. Ed.



Fleming motor yacht appeal

It was great to see Ron Jon Asbery's Ekranoplan, hovercraft and hydrofoil models in the July issue - thanks for sharing. I also started as an aeromodeller and like to combine aspects of land, sea and air models along with precision engineering and electronics. I would like to build a large Sunderland flying boat but that is very much still in the thinking stage rather than the doing stage. Returning to more traditional boating, I am hoping to build a Fleming motor yacht. Does anyone know of a hull or even a kit that might act as a starting point or guide? A few searches online haven't revealed anything but maybe I need to look harder.

**JIM MARTIN
KENT**

You and me both, Jim, as my searches have also drawn a blank. We can only hope someone reading may be able to help. Over to you, chaps! Ed.

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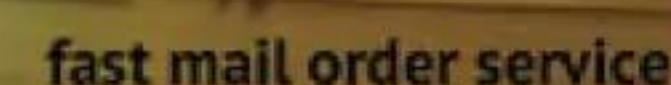
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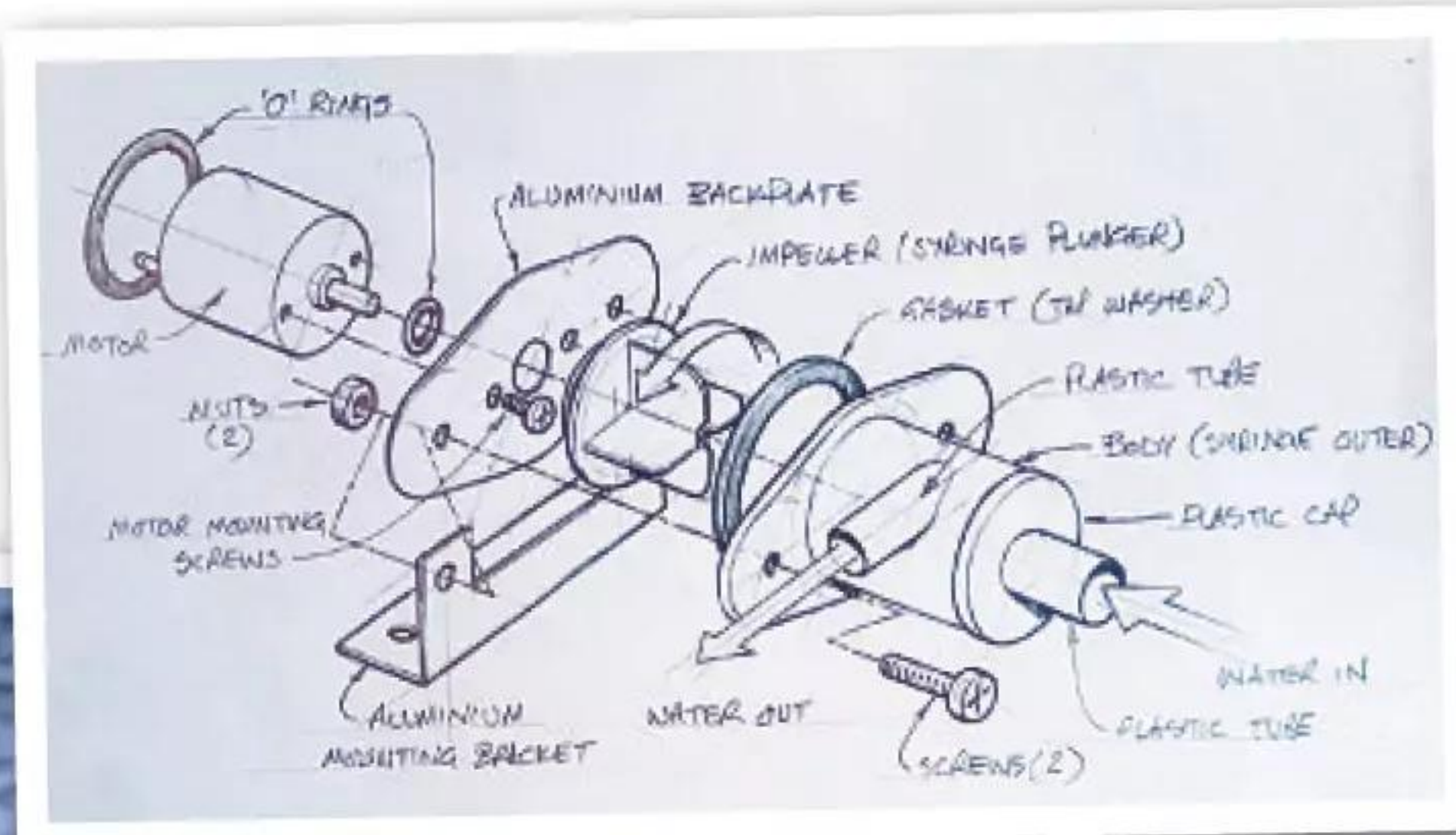


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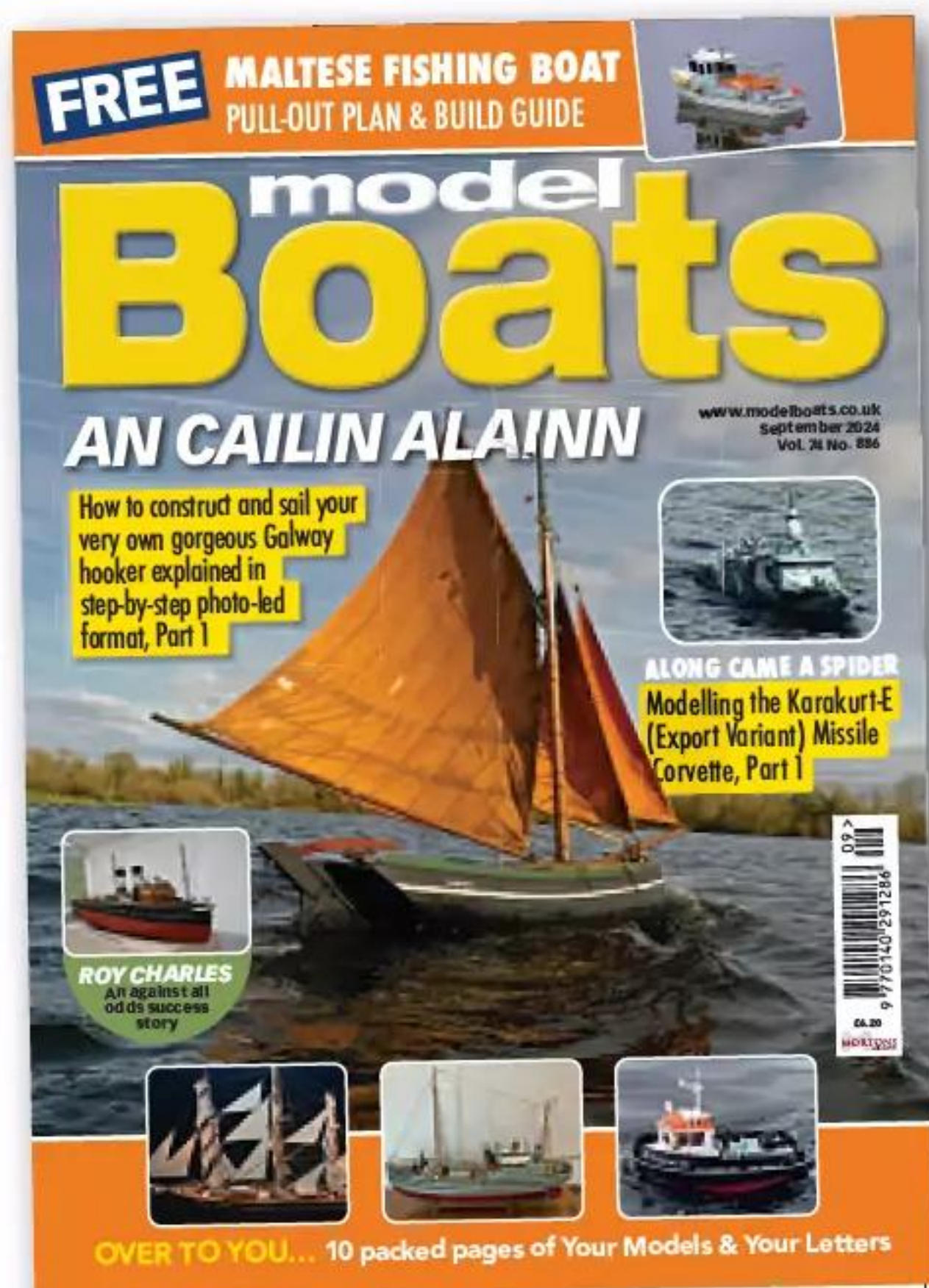
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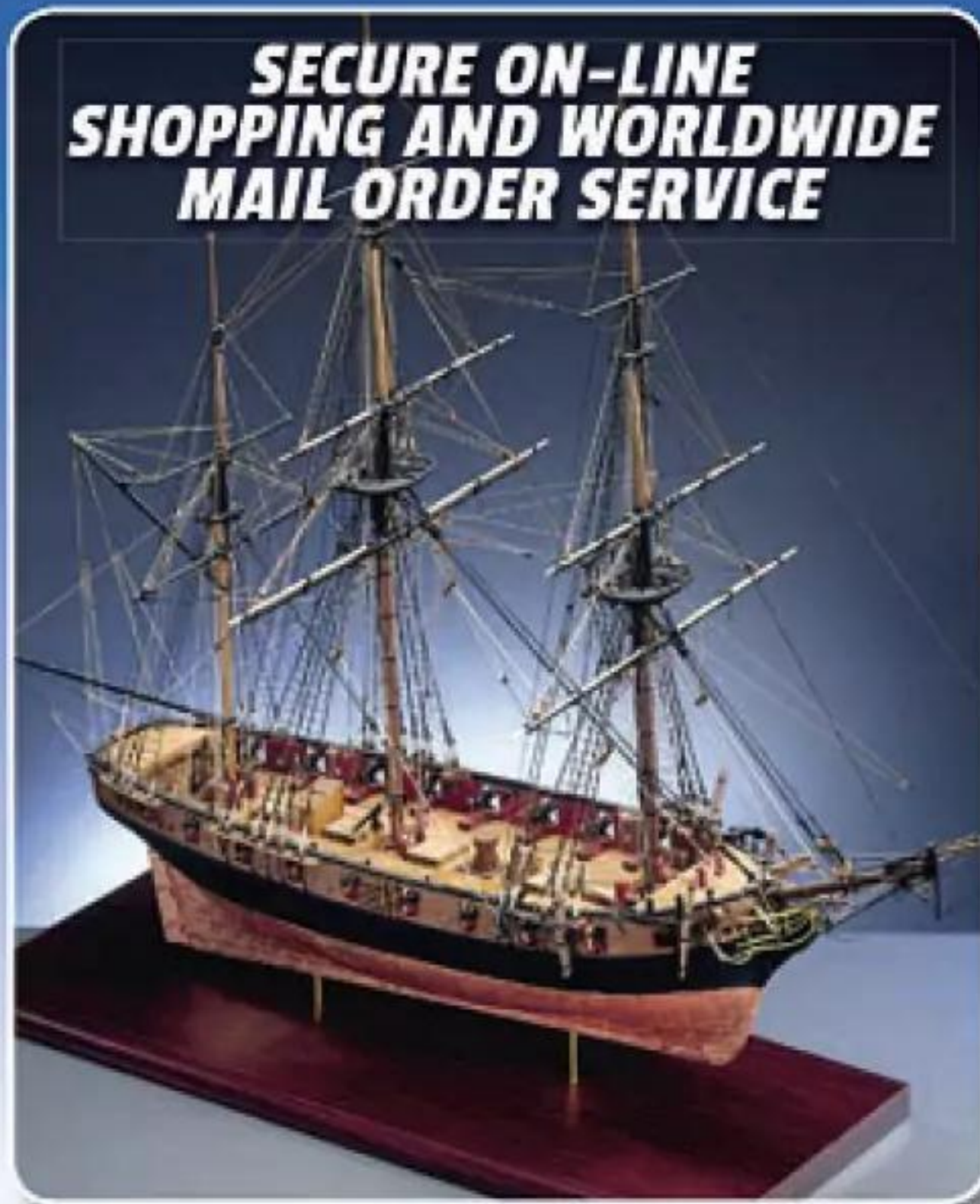
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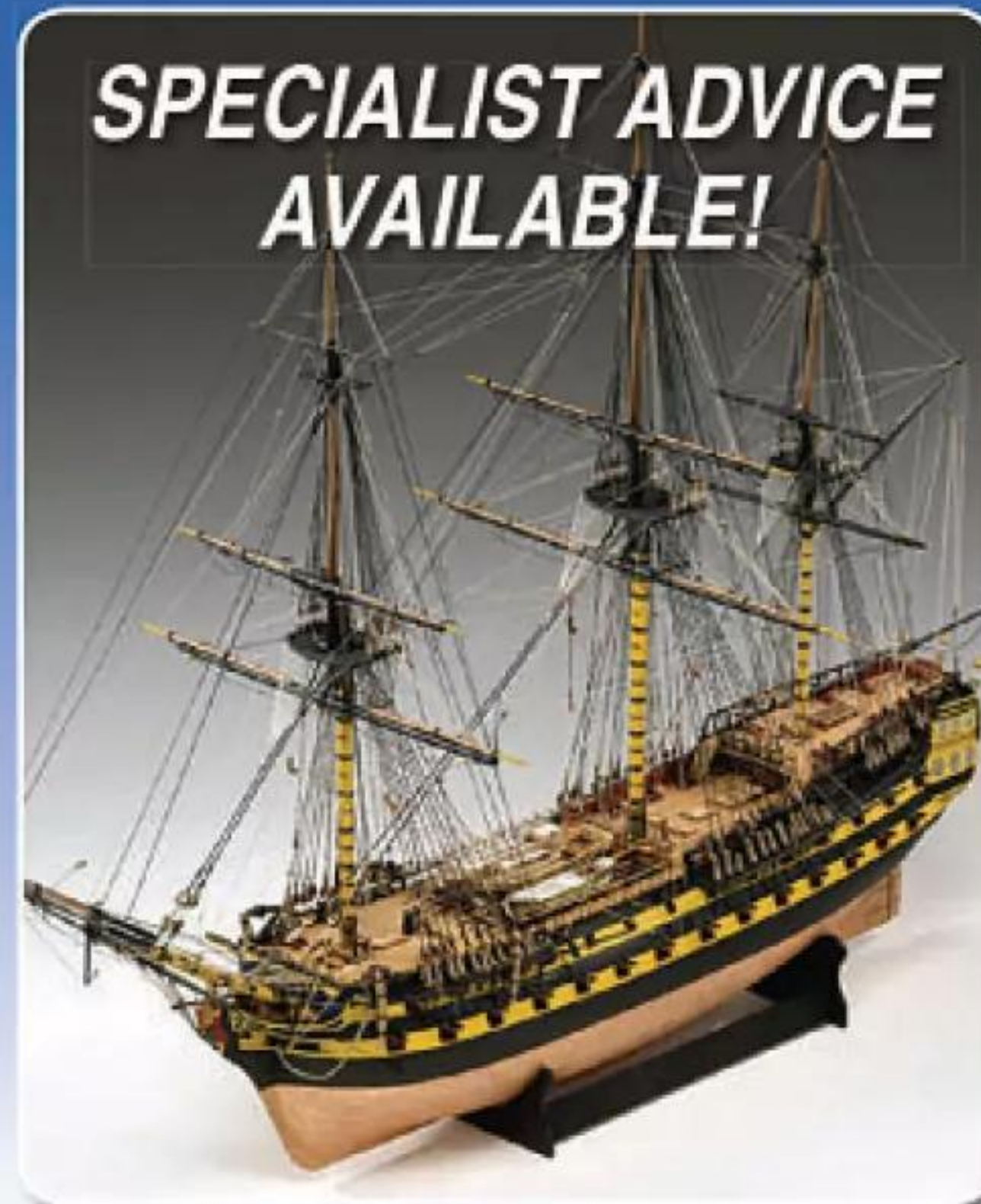
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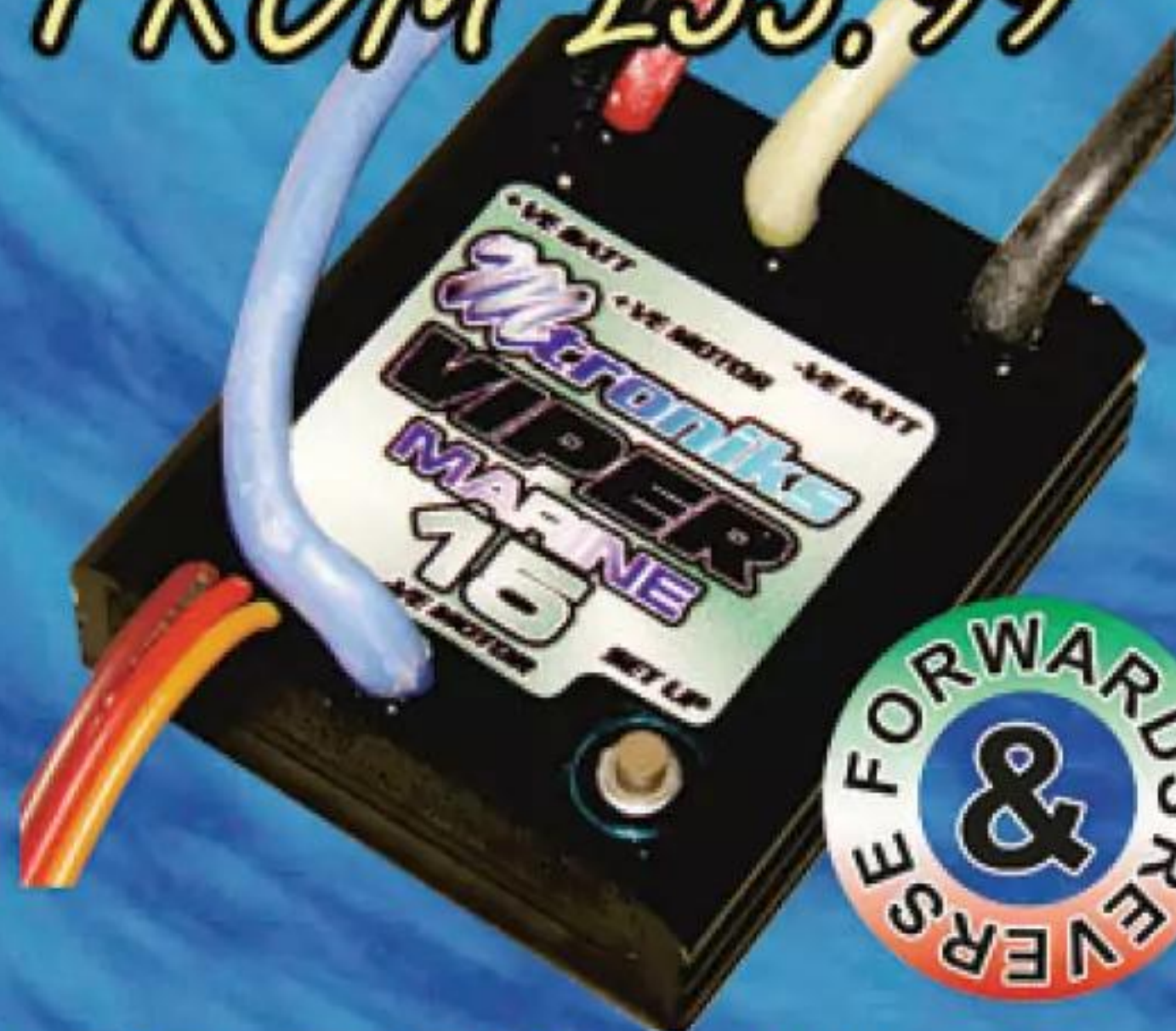


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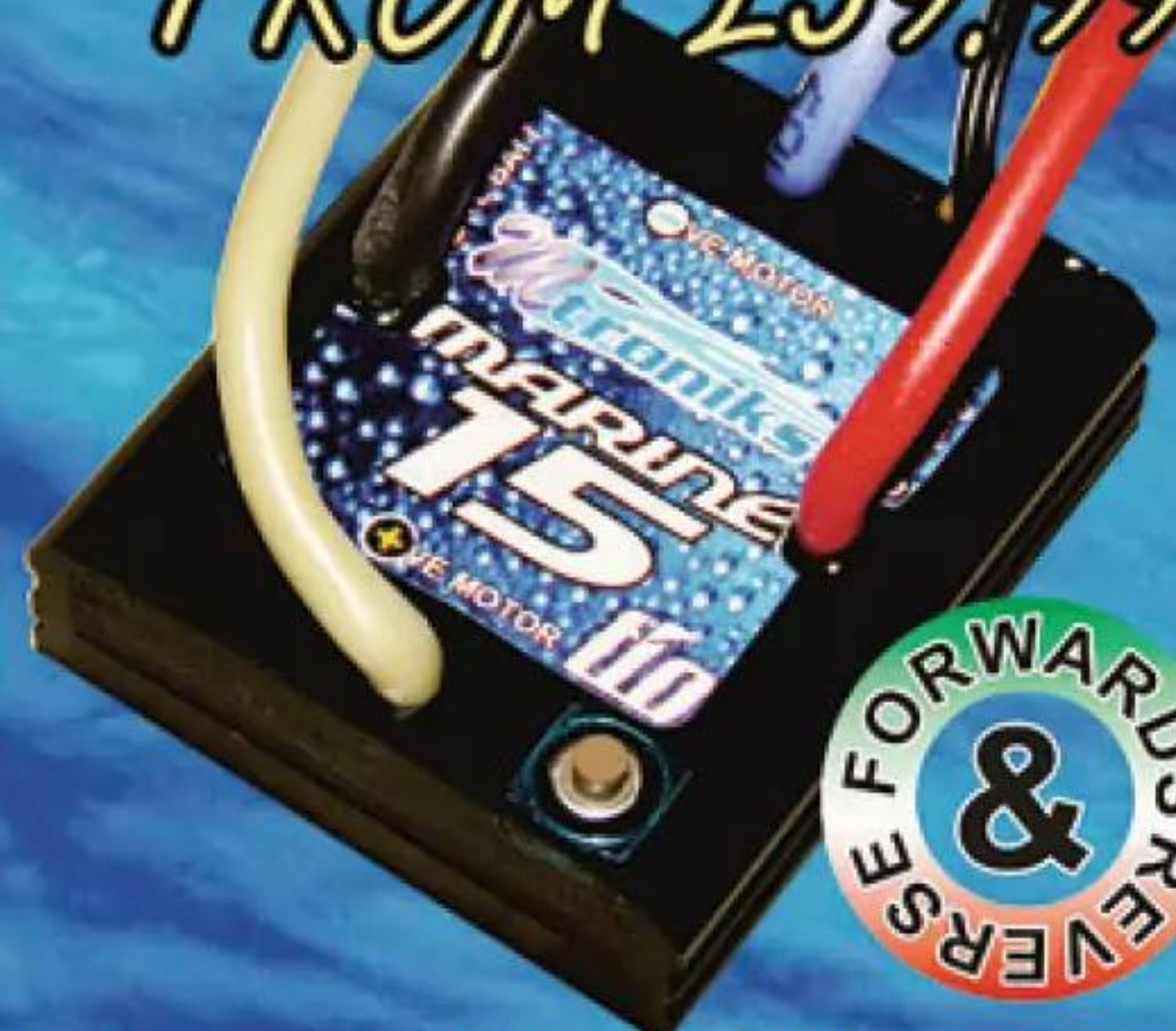


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